

**THE NATURAL HISTORY
OF NONSENSE**



The Natural History of
N O N S E N S E

by **BERGEN EVANS**

*Truth's a dog must to kennel ; he must be whipped out,
when Lady the brach may stand by the fire and stink.*

King Lear, I, iv, 124-126

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To
JEAN

Certain chapters or portions of this book have appeared in *The Atlantic Monthly*, *Harpers Magazine*, *Vogue*, and *Town and Country*.

THIS book is a contribution to the natural history of nonsense. It is a study in the paleontology of delusion. It is an antibody for all who are allergic to stardust. It is a manual of chiropody for feet of clay.

Many friends have helped my unbelief. Miss JACQUELINE JUDGE, Professor JOSEPH M. BACHELOR, Professor WILLIAM BALAMUTH, Professor MELVILLE HERSKOVITS, Professor MOODY PRIOR, and Professor WILLARD VALENTINE have all read sections of the manuscript and made helpful suggestions. So have Dr. JEROME HEAD, Dr. HERMAN L. KRETSCHMER, Dr. GEORGE J. MOHR, and Dr. MORLEY McNEAL, though it cannot be too strongly insisted that none of these people is in any way responsible for my conclusions or for the errors I may have committed or embraced. It would be a poor return for their kindness not to clear them of complicity.

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admired disorder merely by asking a fellow guest a few direct questions.

To thank Professor M. F. ASHLEY MONTAGU, of the Hahne-mann Medical College, is almost an impertinence, his assistance has been so great. For some time we thought of making the work a collaboration, and such it might have been had not the pressure of his duties prevented. Those who know his writings will perceive his hand in many places, particularly in the chapter on hygiene and the chapters on race. His distinguished position as a scientist makes it imperative, however, to disclaim for him any responsibility whatever for the opinions and specific details that appear in those or other chapters. It was not he who rushed in where anthropologists fear to tread.

B.E.

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HERE'S LOOKING AT YOU

Until about a hundred years ago rational men lived like spies in an enemy country. They never walked abroad unless disguised in irony or allegory. To have revealed their true selves would have been fatal.

To-day their status is more that of guerillas. They snipe from cover, ambush stragglers, harass retreating rear guards, cut communications, and now and then execute swift forays against detached units of the enemy. But they dare not yet risk an open engagement with the main force; they would be massacred. Their life is dangerous but exciting and is warmed by a sense of camaraderie not often known among the dull conscripts of orthodoxy.

This book is intended as a sort of handbook for young recruits in the gay cause of common sense. It indicates where the main armies of ignorance are now encamped and tells in a secret code what garrisons are undermanned or mutinous. It tries to show the use of cover and camouflage and the techniques of infiltration and retreat. It maps road blocks and mine fields and shows how to rig a booby trap. It warns of counterespionage and gives—again in code—the five infallible signs to know a fool.

When the recruit has finished with it he can toss it over the wall into the enemy's barracks. It may encourage desertion.

ADAM'S NAVEL

WE may be through with the past, but the past is not through with us. Ideas of the Stone Age exist side by side with the latest scientific thought. Only a fraction of mankind has emerged from the Dark Ages and in the most lucid brains, as Logan Pearsall Smith has said we come upon 'nests of woolly caterpillars.' Seemingly sane men entrust their wealth to star-gazers and their health to witch doctors. Giant planes throb through the stratosphere, but half their passengers are wearing magic amulets and are protected from harm by voodoo incantations. Hotels boast of express lifts and a telephone in every room, but omit thirteen from all floor and room numbers lest their guests be ill at ease.

We function on a dozen different levels of intelligence. Earnest suburbanites in lounge suits go in their cars to celebrate the ancient rites of Attis and Mithra, theophagous in grape juice. On the first Sunday after the full moon following the vernal equinox we dye eggs, according to immemorial custom, and seven days before the end of the year worship the pine tree, as did our neolithic forebears. Matter and impertinency are inextricably mixed. One of America's greatest universities employs its vast endowment to furnish 'scientific proof' of clairvoyance, while, at another, a Nobel prize winner in physics, finding Truth to be incomprehensible, decides that the incomprehensible must be true. The discoveries of the telescope, the spectroscope, and the interferometer are daily news, but the paper that carries them

probably has an astrologer on its staff and would sooner omit the headlines than the horoscope.

Simple numbers are still, apparently, magic, and exercise a curious tyranny over our minds. Any commonly received opinion that has anything to do with three or nine must be scrutinized with care before being accepted. Seven, in particular, possibly because of its prominence in the Hebrew Scriptures, has a marked effect on our thinking and on our customs. We are told with assurance that a seven months' child is more likely to live than an eight months' child and that the body is 'completely renewed' every seven years. There are 'seven seas' and 'seven ages.' The statute of limitations is effective after seven years. Twenty-one is the age of legal maturity. Why? Have physiologists and psychologists fixed this as *the* date, or is it merely the product of the magic numbers three and seven? And *do* great nations settle matters of such importance on such irrational bases? If anyone doubts it, let him consider the agitation that is caused by any proposal to change the voting age. Millions 'know,' with passionate conviction, that twenty-one is the year to come of age, and no other will do.

Nothing is more vital than error. Controversies rarely if ever die. They merely sink beneath the surface of literate attention and continue a submerged existence in the dark, unfathomed caves of the popular mind. City folk were mightily amused in 1925 to discover that Special Creation was still an issue in Dayton, Tennessee. But their amusement was a little supercilious. On that issue a man can get a bloody nose, and a jail sentence too, in New York, right on Fifth Avenue, any day in the week he wants to raise it—and in Cleveland and Chicago as well, and in every other city in America.

As an extreme example, take Adam's navel. Five hundred years ago it was a burning problem. The Fall of Man was a

favourite subject for painters, and the time chosen for representation was invariably just after the Fall, when our first parents were still artistically naked yet modestly fig-leaved. But the fig leaves failed to cover the entire difficulty; there still remained the problem of their navels. Did Adam and Eve have them, or not? If they did not, were they not, as human beings, imperfect? And would God have created anything imperfect? If they did, what use were they? And would God have created anything without a purpose?

While theologians disputed, the more timid artists hid at least half their perplexity under Eve's flowing hair. But in Adam it had to be squarely faced. Some gave him a navel and some did not. Michelangelo, as though to make amends for the niggardliness of others, dealt very generously with him in the matter; and since he was painting for the Pope's private chapel and was in close communication with the then-reigning pontiff, one would think that this would have settled the question. But it obviously did not, for in 1646 we find the learned Sir Thomas Browne deep in the controversy, on the anti-navel side. The ascription unto Adam, he wrote, of 'that tortuosity or complicated nodosity we usually call the Navell' is a dreadful mistake, notwithstanding 'the authentick draughts of Angelo and others,' in that it implies that 'the Creator affected superfluities or ordained parts without use or office.'¹

More subtle sophists, however, argued that God might have affected these particular superfluities in order to test

¹ For representations of Adam and Eve without navels, see Herman Heinrich Ploss, Max Bartels, and Paul Bartels: *Woman* (London: William Heinemann, Ltd.; 1935), Fig. 60, vol. I, p. 49.

Michelangelo's painting is on the ceiling of the Sistine Chapel. He worked under the eye of Pope Julius II. Raphael has two pictures of Adam with a navel, both in the Vatican. One was painted for Julius II and the other for Leo X.

Sir Thomas Browne: *Works* (Edinburgh: John Grant; 1927), vol. 2, p. 212.

the faith of later men—to see, that is, whether they preferred to be reasonable or devout.

This ingenious theory, that the real ‘use or office’ of Adam’s navel was to tempt men into the sin of being sensible, was revived in 1857 by Philip Henry Gosse, the naturalist, as an analogy to prove that while the fossils which the paleontologists had discovered *seemed* to imply organic evolution, God might have so arranged them at the Creation in order to damn nineteenth-century sceptics.¹ Gosse had a few followers among the Plymouth Brethren, but most men greeted his suggestion with shouts of derision. It was inconceivable that God would have baited a trap for anything so respectable as the Royal Society. And anyway, they said, Adam’s navel was as dead as a doornail.

But they were wrong. Although it was no longer a fashionable topic among the learned, it must have continued as a subject for speculation among millions. For in 1944 it suddenly raised its head in no less august surroundings than the Congress of the United States, when a subcommittee of the House Military Affairs Committee, under the chairmanship of Representative Durham of North Carolina, opposed the distribution of *The Races of Mankind* to American soldiers on the ground (among other reasons) that in one of its illustrations ‘Adam and Eve are depicted with navels.’²

The Honourable Gentleman’s motives for raising this particular objection can only be surmised. Perhaps they were uncertain of orthography *and* of the scope of their duties and in consequence assumed that Navel Affairs came under their jurisdiction; but the chances are that they were just laying down a smoke screen, for the pamphlet in question, a thirty-page booklet prepared by two Columbia professors, con-

¹ Philip Henry Gosse: *Omphalos: an attempt to untie the geological knot* (London: J. Van Voorst; 1857). ‘This curious, this obstinate, this fanatical volume,’ his son, Sir Edmund Gosse, called it.

² So quoted in the *Washington Times-Herald*, April 28, 1944, p. 2.

tained information that almost any politician would feel it his duty to conceal. It stated that the concept of race is based largely on prejudice, that most of us are of mixed blood, and that non-physical racial characteristics are probably the product of environment. And, most horrible of all, it chose to illustrate this last assertion from tests given by the United States Army in World War I which indicated that the average intelligence of Negroes from some Northern states was higher than the average intelligence of whites from some Southern states.¹

There would seem to be a political principle that what can't be cured must be obscured, and such a claim, particularly when supported by statistics collected by the government itself, called for a vigorous counter-attack. The committee's charge was a brilliant diversion. The three great strategies for obscuring an issue are to introduce irrelevancies, to arouse prejudice, and to excite ridicule; and the Representatives employed all three in a masterly combination. The issue was a question of fact: were the Army tests quoted correctly? But in one neat phrase they made it a question of religion, an insult to *everybody's* mother, a disparagement of God Almighty, and a piece of plain Yankee damnfoolishness. In exposing Adam's flank the pundits had exposed their own. They little realized the vulnerability of that unguarded umbilicus. But the committee saw its chance and struck a mighty blow for white supremacy—right on the button!

Whether or not the members were themselves agitated by the controversy, it may be assumed that they were safe judges of the prejudices of their constituents, and we may accept their objection as an assurance that a considerable number

¹ Ruth Benedict and Gene Weltfish: *The Races of Mankind* (New York: Public Affairs Committee Inc.; 1943—Public Affairs Pamphlet No. 85), pp. 5, 10, 13, 18.

of people are—or are thought to be—still concerned about Adam's navel.

The knowledge gives us pause. It is like that strange fish captured off the coast of Africa in 1938 which—according to all the textbooks—had been extinct for fifty million years. Yet there it was on the deck of the trawler, impudently alive, humiliating generations of scientists by merely existing, and biting the captain's hand to boot.¹ Disconcerting, that—to have something come out of the Mesozoic era and bite you! Who dare trust himself in a museum again?

The sudden emergence of presumably extinct ideas reminds us, in a similar manner, how near to darkness we really are. Until this century scientific investigators were isolated individuals, working in the face of the neglect and, often, of the hostility of other men. Knowledge was for the most part a collection of accidental discoveries of which few men were even aware. Communication was restricted and slow. It frequently required generations for the news of a discovery to reach the educated; the uneducated never heard of it at all. Even now, despite our free schools, the great mass of people have very little perception of modern knowledge and still less of its implications. They go on believing Pliny because that's the latest information to reach them.

It has been only a little over three centuries since the most enlightened men perceived that our world was not the centre of the universe. The outlines of the main land surfaces of the earth were unknown two hundred years ago, and the last of the major continents was not explored until 1888, when Nansen crossed the Greenland icecap and definitely established the fact that we are still living in a glacial age. As late

¹ *Time*, April 3, 1939, p. 35. 'A Living Fossil,' *Time* called it. But aren't we all?

as 1675 the learned Jesuit Kircherus catalogued mermaids and griffins among the animals in Noah's ark; and—though these particular passengers had been quietly dropped overboard—the first edition of the *Encyclopædia Britannica* (1768—1771) entertained no doubt whatever about the factual existence of the ark itself. The only points that it felt called on to discuss had to do with the stowage of the various animals and the location of Noah's own cabin. By the eleventh edition (1911) the story is described as a 'myth,' though it is curious to observe that in the fourteenth (1943 revision) the expression of scepticism is more guarded. Perhaps the news that the ark has recently been discovered, 'imbedded and preserved by ice' on top of Mount Ararat,¹ had led them to doubt their own doubts, though it is more likely that they were merely considering the susceptibilities of a wider circle of subscribers. The Mountain of learning has made more than one tentative step toward the Mahomet of ignorance in our time.

The recentness of much knowledge is astonishing when one stops to consider it. Millions of men are still living who could have seen Darwin. The man who discovered that germs cause disease died in 1910. The father of antiseptic surgery lived until 1912. Pavlov was living in 1936, Freud in 1939. It was not until 1875 that the essential nature of the act of fertilization was understood, and not until the 1920's that the various

¹ The finding of the Ark was reported in *The Pathfinder*, July 3, 1944, p. 26. It is said to have been discovered by one Roskovitsky, a Russian aviator in World War I, while on 'a routine flight' over Ararat. The utterly unprejudiced condition of his mind is revealed by the fact that at first he 'thought it was a submarine.' The news of the finding was suppressed by the Bolsheviks, who came into power soon after and realized that this verification of the Bible would be a death blow to their antireligious campaign. Roskovitsky is believed to be dead, but his work is being carried on by Faith Publishing House of Guthrie, Oklahoma, and by Professors A. J. Smith and G. F. Fletchall, of Intercession City, Florida, who issue voluminous literature on the Ark. A Turkish expedition, it seems, had sighted the Ark in 1875 but was unable to collect any scientific data because it 'was haunted.'

hormones were isolated. Only in the past two decades has the study of animal behaviour been put on a scientific basis. Our knowledge of prehistoric man is almost entirely a twentieth-century affair, and an awareness of how much that knowledge affects our knowledge of ourselves seems destined to wait until the twenty-first or later.

Two hundred years ago—only a little more than two human life spans—practically everybody believed in spooks and demons and witches and supernatural monsters. The last legal execution for witchcraft took place late in the eighteenth century, so that our grandfathers could have known men who had seen men and women put to death for associating with the Devil. Blackstone said that to deny the actual existence of witchcraft is 'flatly to contradict the revealed Word of God.' As it is. And to the end of his life John Wesley maintained that 'the giving up of witchcraft is in effect giving up the Bible.'¹

Millions—probably the majority of mankind—still believe in witchcraft. Between 1926 and 1936 the *New York Times* carried stories of more than fifty cases of witchcraft. Fifteen of these were in the United States, distributed among New York, New Jersey, Pennsylvania, New Mexico, Minnesota, Wisconsin, and Massachusetts. They came into the news not because witchcraft in itself constituted news, but because the supposed witch was injured or killed by those who thought themselves victimized by his or her art. The most sensational case was that of Nelson D. Rehmeyer, a farmer living near York, Pennsylvania, who was murdered by three of his neighbours who wanted a lock of his hair to do 'hexing' with. The coroner, in his report on Rehmeyer's death, said that

¹ See Gen. vi, 4; Exod. xxii, 18; Levit. xix; xxxi; xx, 6; xxvii; Deut. xviii, 10; I Sam. xviii, 10; xxviii, 3-30; Matt. iv, 24; viii, 16, 28-33; Mark xvi, 9; Luke iv, 41; viii, 2; 27-36; Acts xvi, 16-18; Gal. v, 20; *et passim*. For Blackstone, see the *Commentaries*, 1765, IV, 60. For Wesley, see *The Journal of the Rev. John Wesley, A.M.* (London, 8 vols., 1909-16), vol. V, 265 n., 374-75; VI, 109.

more than half the inhabitants of that part of Pennsylvania believed in witchcraft.¹

The truly astonishing fact, however, is not that so many still believe, but that so many do not. When one considers the universality and antiquity of the belief, its sanction in literature, law, and religion, and the recentness of any doubt of it, it is amazing that almost half of even a civilized community no longer believes it. As such transformations have gone heretofore, this is a rapid change.

Those who have the good fortune to be in the educated, reasonable minority of mankind are not always aware how small a minority they are. They do not stop to think, for instance, how few people read anything except the headlines, the funnies, and the sport pages. They do not realize generally that any work of non-fiction that reaches one-tenth of one per cent of the population of the United States has had a phenomenal sale.² They do not always appreciate how few people think rationally, how very restricted knowledge is even yet, and, above all, how rare is scepticism, the life spirit of science.

¹ See the *New York Times*, January 6, 7, 8, 9, 10, 11, 1929.

And see the *Literary Digest*, January 5, 1929, pp. 24-25; May 4, 1929, pp. 52-56.

² Allowing three or even five readers per copy, the *Reader's Digest* may reach as much as thirty per cent of the American population, the *Saturday Evening Post* five to ten per cent, *Time* three to five per cent. Considering the limitations inherent in the immensity of their audiences, these publications—by mere virtue of presenting *any* ideas—must be regarded as great instruments of mass education in the U.S.A. *Time*, in particular, for all that it is likely to be sued by *Folklore* one of these days for infringement of territory, has been a tremendous leavening force in the modern world. Magazines such as *Harper's*, the *Atlantic Monthly*, and the *New Yorker*, which assume some knowledge and scepticism in their readers, do not reach (directly, at least), even one per cent of the population. Serious journals of opinion such as the *Nation* or the *New Republic* probably do not reach one tenth of one per cent.

GREAT GUNS AND LITTLE FISHES

WHEN in 1820 Pope Pius VII decided that the Copernican system might be regarded as established, one would have thought that the long controversy concerning the motion of the earth was over.¹ So it was, among the enlightened; but the pure in heart fought on. The Bible said plainly that the earth had four corners, and Joshua, they reasoned, could not have made the sun stand still upon Gibeon and the moon in the valley of Ajalon if the earth had been moving.² The Congregation of the Holy Office might weakly succumb to Galileo's heresy in a mere two hundred years, but Glenn Voliva was made of stronger stuff, and as late as 1942, to the comfort of all true believers, he was still thundering out of Zion (Illinois) that the earth was as 'flat as a pancake.'³

Storms do not pass in an instant. Hours after the sun is out

¹ A. D. White: *A History of the Warfare of Science with Theology in Christendom* (London: Macmillan and Company; 1896). The facts concerning Pope Pius's enlightenment are on p. 156.

² For the earth's four corners, see Isaiah xi, 12; Revelation vii, 1. For the stopping of the sun and moon, see Joshua x, 12.

The assurance in Ecclesiastes i, 4 that 'the earth abideth for ever' (*Vulgate*: 'terra autem in aeternum stat') was the passage used chiefly to combat the Copernican heresy.

³ For Wilbur Glenn Voliva, see *Time*; October 19, 1942, p. 50; and the *Christian Century*, October 28, 1942, p. 1330.

Voliva made several trips round the world and came back from each more assured than ever that it was flat. He was not easily discouraged. He announced the end of the world for 1923; when it failed to end he moved the date up to 1927, then to 1930, 1935, and 1943. He himself came to an end in 1942.

Among other beliefs he maintained that a hat holds the brains in balance and and is therefore indispensable to a thinking man.

again thunder may be heard rolling in the distance. Sighs shake us though the weeping has stopped. And the hiccups and headaches of yesterday's religion (to use Aldous Huxley's phrase) depress and torment us even though the Dionysian raptures have long since faded.

The tumult and the shouting over the motion of the earth was too violent to subside completely in three short centuries. There are still sporadic outbursts of protest, and now and then some zealot will seize an old weapon discarded in the fray and deal the astonished world a blow on the pate with it. He is not always sure of the issue involved, or of the original purpose of the weapon, but it has a convenient handle and makes a loud thwack, and that is enough for him.

When the rotation of the earth was first propounded it was dismissed by the savants as a palpable absurdity. If it were true, they triumphantly pointed out, all the water would run off into space, the wind would blow constantly from the east, arrows shot westward would fall behind the archer who shot them, and 'men would have to be provided with claws like cats to enable them to hold fast to the earth's surface.' Several other inconveniences were thought of, but these were regarded as fully sufficient to prove the theory ridiculous.¹

The intellectual giants who advanced these cunning arguments were rewarded with honours and high positions and in due time were gathered to the glorious dead. But their ingenious logic lives after them and every now and then starts out of oblivion at the most unexpected places. The 'cat's claw' refutation was first put forward by Fromundus of Louvain in the seventeenth century. It still seemed valid to Voliva in the twentieth, though the modern theologian

¹ These lucubrations are drawn from the *Anticopernicus Catholicus* of Giorgio Polacco (Venice, 1644) and the *Anti-Aristarchus* of Libert Froidmont (Antwerp, 1631). They are quoted in translation in White, vol. 1, pp. 145, 139.

confined the necessity for claws to the Australians, being apparently convinced that, whatever befell, Americans would always be right side up.

The same argument, under a slightly more 'scientific' disguise, attracted considerable attention when advanced in July 1944, by 'balding, Danish-born' Christian Adolf Volf in Los Angeles. The whole art of standing up and walking, he maintained, consisted in learning, in our infancy, to overcome the pressure that the motion of the earth exerts upon us. Children and drunks will, he said, naturally walk in an easterly direction, a circumstance which parents and police should take into consideration. Thus a drunk, he averred, 'will resist entering a patrol wagon when it faces west but climbs aboard willingly when it faces east.'¹

Some maintain that it is not toward the east but toward the west that the uninstructed and uninhibited will naturally proceed. It is, they insist, a matter of balance, so that 'tots and sots' (as *Time* calls them) run counter to the earth's motion in order, like boys on a barrel, to prevent being thrown on their faces. But whatever the niceties of the argument, there is full agreement between the two sects that the earth's motion affects our every act.

Ultimately, of course, our knowledge of the motion of the earth is a deduction and so, perhaps, a certain amount of confusion is to be expected. But our knowledge of climate and weather, being more a business of sheer observation, ought to be more accurate. Not predicting, that is, but just describing.

Just as much confusion, however, reigns in this as in any other department of knowledge. Certain surmises and legends have become stereotyped, and experience is generally rejected unless it happens to conform to the preconception.

One of the most persistent errors regarding climate is that

¹ *Time*, July 10, 1944, p. 50.

the Arctic is a land of eternal snow and unendurable cold. The basis of this belief seems to be an imaginative conclusion drawn from the erroneous assumption that it gets colder in direct proportion to the distance north of the equator—a conclusion supported by almost every cartoonist who ever ran out of more original ideas. Actually, the Arctic is dry, and there is very little snow there. More snow falls in Virginia than in the arctic lowlands. Nor is it so cold as it is generally thought to be. It gets colder, by as much as ten degrees, in Montana than it ever does at the North Pole. Reykjavik, in Iceland, is just below the Arctic Circle, yet it is considerably warmer there, judging by the mean annual temperature, than in New York City.¹

It is not a land of darkness, either. At no time, says the Federal Writers' *A Guide to Alaska*, is it ever totally dark in the Arctic, because of refraction and moonlight on the snow, and the 'number of hours yearly during which print can be read out of doors is as great in the Arctic as in the tropics.'²

Nor is it a land of lifeless desolation. During the summer, temperatures of ninety and over are recorded, sometimes for weeks on end. There are hundreds of species of flowering plants and grasses which sustain vast herds of caribou and musk oxen. Cabbages, potatoes, roses, lilacs, honeysuckle, and many other familiar flowers and vegetables grow profusely far north of the Arctic Circle, and the arctic waters are much fuller of life than the tropical waters.³

Persistent popular notions to the contrary are inherited from the Greeks and serve to show how tenacious an illusion

¹ Merle Colby: *A Guide to Alaska* (New York: The Macmillan Company; 1939), p. xliv. And see Vilhjalmur Stefansson: *The Friendly Arctic* (London: G. Harrap).

² *A Guide to Alaska*, p. xliv.

³ For the plants, see *A Guide to Alaska*, p. xliv. For the animals, see *The Friendly Arctic*, p. 74. For the marine life, see Sir John Murray: *The Ocean* (London: Williams and Norgate).

can be. If the Greeks went north and left their seagirt peninsula, they did, indeed, find it colder. And if they went south, to Egypt or Libya, they did indeed find it hotter. But they were unjustified in assuming, as they did, that the farther north they went the colder it would get and the farther south they went the hotter it would get, and other peoples in other latitudes have been even more mistaken in taking over the Greeks' original mistake.¹

Among other delusions and myths in the realm of physical geography, climate, and meteorology, are the irresistible suction of undertows and quicksands, the belief that lightning never strikes twice in the same place, that heavy gunfire produces rain, that thunder sours milk, that tornadoes have a 'dead centre' in which the law of gravity is inoperative, and that frogs, small fish, and other organic beings and substances have fallen from the sky during heavy rains.

Dr. William H. Davis, formerly professor of Physical Geography at Harvard, believed the 'undertow' to be wholly a figment of frightened bathers' imaginations. 'An active and persistent seaward underflow at the bottom,' he insisted, 'demands the occurrence of a correspondingly active and persistent shoreward flow at the surface.' And 'except under doubly specialized conditions of wind direction and shore configurations' he did not believe that any such flow existed. There is, of course, he granted, an intermittent seaward pull as each wave slides back from the beach, but this is reversed every few seconds by an equally temporary shoreward movement of the next wave. Currents that skirt the shore are another matter, but they are not what is commonly meant by 'undertow.'²

¹ See chapter III, 'Error in Geography,' by John Leighly, in *The Story of Human Error*, edited by Joseph Jastrow (New York: Appleton-Century; 1936) particularly p. 97.

² See *Science*, February 20, 1925, pp. 206-8. And see *Scientific American*, August 1925, pp. 124-25; November 1925, pp. 346-47; January 1927, p. 70.

The famous sucking force attributed to quicksands and bogs is probably a misunderstanding of the sucking sound made when a large object or a person is pulled *out* of such a substance. But the force that created the suction was in the puller, not in the mire. Quicksand is simply a loose mass of sand mixed with water and will support the human body about twice as easily as water will. Unless the victim exhausts himself with frantic struggles—as, unfortunately, he tends to do if he knows it is quicksand—he is not likely to sink much below the armpits.¹

That lightning never strikes twice in the same place is a popular axiom usually advanced as an argument against the possibility of the recurrence of some misfortune. But to the thoughtful it can offer little comfort, for the fact is that lightning is far *more likely* to strike twice in the same place than not. The reason is that lightning strikes, or passes through, conductors, whose total surface constitutes only an infinitesimal fraction of the earth's surface. In the first ten years following its erection the mast on top of the Empire State Building was struck sixty-eight times, and the bronze statue of William Penn on the City Hall in Philadelphia has been struck even more often.

Among conductors—though not very good ones—are human beings, who manage to get struck by lightning about ten times as frequently as the laws of chance would indicate for the space they occupy.²

Of course the word 'struck' in itself embodies a miscon-

¹ These facts were published by Lawrence Perez, Director of the Soil Mechanics Laboratory at Cooper Union in New York, in *Science News Letter*, April 12, 1941, p. 232.

² The estimate of the probability of human beings being struck by lightning is based on the calculation of experts that lightning strikes the earth 2,000 million times a year, which averages out at eight strokes per square mile; that each human being, standing, occupies about a square foot; that approximately four hundred people are struck every year in the United States, which has a population of close to a hundred and forty million and comprises three million square miles.

ception, for, as the recent experiments of Dr. McCann of Westinghouse Electric and Dr. McEachnon of General Electric have shown, the 'stroke' of lightning consists of a series of interchanges of current between the earth and the sky, the most brilliant part being one of the upward discharges.¹

That the firing of artillery produces rain is a belief which, for all its prevalence, seems to have no better foundation than the similarity of gunfire to thunder. Yet it has been widely held. In 1911 a question was asked in Parliament as to the advisability of gunnery practice during the harvest season. The unusual wetness of the summer of 1915 was frequently ascribed to the cannonading in Belgium, and, according to a distinguished meteorologist quoted in the *New Republic* in 1944, the idea is still current.²

That thunder sours milk is simply a confusion between the thunder itself and the humid, sultry weather in which thunderstorms are most likely to occur. Souring is the consequence of bacterial action, and the bacteria thrive best in warm, wet air.

The little fishes that come down in heavy storms are one of the most delightful and persistent of meteorological myths. Generous narrators sometimes throw in a few frogs for good measure, and enthusiasts have added worms, snails, mussels, snakes, turtles, and even 'a whole calf.' One at least has claimed that it has rained milk which 'the vehement heat of the sun' draws up from the udders of the cattle. Possibly³ to feed the calf.

Mr. Charles Fort, who seemingly devoted his entire life to

¹ *Scientific American*, July 1942, pp. 23-25. *Science Digest*, June 1943, p. 72. J. B. S. Haldane: *Science and Everyday Life* (London: Lawrence and Wishart; 1939), p. 44.

² The *New Republic*, March 13, 1944, p. 349.

³ John Swan: *Speculum Mundi* (Cambridge: Printed by Roger Daniel, Printer to the University of Cambridge: second edition; 1643), pp. 140-42. Swan regards the story of the calf as 'idle' but accepts the milk. It 'may the sooner be done in summer,' he explains, 'and in hot countreys.' The frogs, he says, are 'engendered' in the sky out of 'vapour' which has been 'exhaled out of Marish grounds.'

collecting 'authentic' instances of bizarre downpours, was of the opinion that far stranger things than calves and milk have rained down. In addition to a dozen species of fish and reptiles his records include fungi, stones (with and without inscriptions), formless masses of protoplasm, hatchets, masks, and 'the ceremonial regalia' of savages.¹

But the orthodox confine themselves to fish. The animated shower is usually brief, though there is a claim that 'in the Chersonesus it once rained fishes uninterruptedly for three days.' Usually the fish are deposited within a small area—a few square yards, a ditch, or even a rain barrel. In some narratives, though, they cover acres, thirty-two square miles being the record. Most of them are small, from one to three inches on the average, though a woodcut published in Basle in 1557 shows fish 'of quite marketable size' coming down upon the delighted townsfolk. Perch, stickleback, trout, herring, and eels have been identified. Some accounts have the fish dead, others have them leaping merrily in the meadows. Some witnesses have regarded them as evil portents and refused to touch them; others, more sceptical or more hungry, have popped them into skillets.²

Most pluvial fish descend on India. There are ten accounts of rains of fishes from India for every one from less favoured lands. Yet the distribution is fairly wide: similar reports have

¹ Charles Fort: *The Book of the Damned* (New York: Boni and Liveright; 1919), pp. 42–50, 96, 99, 118, 138, 139, 151.

² For an account of falling fish, see *Nature*, September 19, 1918, p. 46. And see the article by Gudger, note 1, p. 29 below.

For the glad day at Basle, see E. B. Boulenger: *Searchlight on Animals* (London: Robert Hale; 1936), p. 111.

Among the stout of heart might be mentioned a General Smith whose regiment was on the march a short distance from Pondichery, in 1809, when they were overtaken by a heavy shower, at the conclusion of which 'to the astonishment of all' fish were found in the soldiers' hats. The General shared the common amazement but, with that presence of mind that marks the veteran, had the creatures collected and served up that evening at his private mess.

come in from England, Scotland, Germany, France, the United States, Ecuador, Burma, and the Pacific islands. Most of them came down in the last century or earlier, but there are enough recent accounts to show that Nature (or at least human nature) has not changed. In 1901 a spate of perch landed in a cotton field at Tiller's Ferry, South Carolina. Hendon, in England, was deluged with sand eels in August 1918. Ripley encourages the reader to take advantage of the second part of his famous title by quoting an eyewitness who professed to have seen a piscatory downpour in Australia in 1924. And in 1931 the *New York Times* described a rain of perch at Bordeaux so heavy 'that motor cars were compelled to halt.'¹

So common, in fact, have narratives of falling fish become that special variations have to be discovered to attract any particular attention. Worthy of honourable mention among these greater efforts are the two *living* frogs found, on June 16, 1882, inside a hailstone by 'the foreman of the Novelty Iron Works,' at Dubuque, and the remarkable eruption—described by Humboldt—of the volcano Carguairazo which in 1698 sprayed boiled catfish over Ecuador.²

Several explanations of these rains have been offered. Mr. Fort, whose theories are hardly less amazing than his facts, was of the opinion that there is a 'Super-Sargasso Sea' hovering a few miles above the earth, 'just beyond the reach of gravity,' in which is collected interstellar flotsam, fragments of which are from time to time dislodged by cosmic storms and sprinkled over our planet.³

¹ See the references in *Nature* and Fort, above. Robert L. Ripley's *Believe It or Not!* is obtainable in a score of editions.

The *New York Times*, November 24, 1931, p. 2, col. 6.

² For the miracle at Dubuque, see *The Book of the Damned*, pp. 175, 181. Fort gives the *Monthly Weather Review*, June 1882, as his authority.

For the Carguairazoan carfish, see Alexander von Humboldt: *Views of Nature* (London: Bell; 1896), p. 367.

³ *The Book of the Damned*, pp. 27, 87-88, 95-97, 174, 181.

The majority of believers, however, stick to two less imaginative explanations. One is that heavy rains flood frogs out of their hiding places and revive estivating fish. The other is that waterspouts may sweep up shoals of small fish and drop them inland. But the first of these is no more than an embarrassed apology for mendacity, for no one doubts that frogs and even, under certain conditions, small fish have been seen on the ground after a cloudburst. The second is possible, though not probable. It has the support of Dr. W. E. Gudger, of the American Museum of Natural History, who has examined the question with great care. But against him and those who share his credulity may be advanced the facts that many of the rains are located far inland, that many of the fish are fresh-water fish, and that the collapse of a waterspout on a luckless town would hardly be mistaken for rain.¹

Minor dalliers with false surmises have suggested that the fish may have been flying fish that had lost their bearings in a fog. But this hopeful contribution is founded on the assumption that flying fish fly, whereas they merely propel themselves from wave to wave in prolonged glides. And the most unfortunate flying fish could scarcely get himself fifty feet inland, and the most sanguine fabulist could hardly expect the most credulous listener to regard the discovery of a small dead fish on the beach as a supernatural event.

To the sceptic, stories of rains of fishes offer two lines of conjecture: have they any basis in fact, however slight, and what makes them flourish so?

As for the first, there is, as has been said, at least a possibility in the waterspout theory and therefore it would be dogmatic to deny it flatly, but no trained observer has ever been on hand when such an event happened. Some of Dr. Gudger's more reliable witnesses make the interesting

¹ W. E. Gudger: 'Rains of Fishes' in *Natural History*, November-December 1921, pp. 607-19.

point that the fish that descended on them were headless, rotten, and partly eaten—suggesting birds to the incredulous, and God knows what to the credulous.

Humboldt's story, preposterous though it sounds, has a faint claim to credence. Lakes do form in the craters of dormant volcanoes. Fish do live in such lakes. If the volcano suddenly became active, the lake *might* be transformed into a geyser, and the fish, pressure-cooked, shot abroad like buckshot. But since this particular free lunch was distributed long before Humboldt was born, his evidence is only hearsay.

To the sceptic's second question—what is the vital principle that keeps these weird stories alive?—two answers have been proposed. One is that they are a sort of detritus of the old belief in spontaneous generation, and the other is that they are fossilized 'evidence' for the waters which the Bible says are 'above the firmament.'

Until less than a hundred years ago it was generally believed that certain forms of life were created by the action of sunlight on mud. 'Your serpent of Egypt,' says Lepidus, in *Antony and Cleopatra*, 'is bred now of your mud by the operation of your sun: so is your crocodile.' Even the doubting Sir Thomas Browne granted that the sun was 'fruitful in the generation of Frogs, Toads and Serpents' and that grasshoppers 'proceeded' from the frothy substance on the stalks of plants that boys call cuckoo spit.¹

It was not until fairly late in the nineteenth century that this belief was overthrown, and in the battle that then raged over paleontology these rains of fishes were put forward as a non-evolutionary explanation of the presence of marine fossils in mountainous districts. The defenders of special creation had to confess that the fossils did resemble existing marine forms, but this, they insisted, did not prove that the

¹ *Antony and Cleopatra*, II, vii, 29–31.

area must have been at one time under water. Rather, they said, 'seeds' and small specimens had been carried inland by one of these fabulous showers where, out of their true element, they had developed 'abortively.' This last was to account for the fact that while the fossils were similar to living species they were not identical. And it is interesting that of the forty-four 'authentic' narratives that Dr. Gudger was able to find, forty were published during the period of this controversy.

Whether there are or are not waters above the firmament is a question that has long ceased to agitate anyone except, possibly, Representative Durham and his committee. But it was once a crucial issue upon which the veracity of Holy Writ was staked and which therefore had to be defended at any cost—and among the costs of theological disputes truth has never been spared. A few fish slipping through a celestial crack were as nothing compared with some of the 'evidence' presented. Thus Gervase of Tilbury, a thirteenth-century chronicler, tells us of a citizen of Bristol who 'as he sailed on a far-off ocean' accidentally lost his knife overboard, which very knife 'at the same hour fell in through that same citizen's roof-window, at Bristol, and stuck in the table that was set before his wife.' Furthermore, coming out of mass one misty, moisty morning, certain folk, he says, saw an anchor let down from a cloud ship and grappled to a tomb and heard cries of mariners in the fog above them. While they gazed a cloud sailor came down the rope hand by hand to free it, but 'he was caught by those who stood around and gave up the ghost, stifled by the breath of our gross air even as a shipwrecked mariner is stifled in the sea.' And after an hour or so, his fellows above, 'judging him to be wrecked, cut the cable, left their anchor, and sailed away.'¹

¹ Gervase of Tilbury: *Otia Imperialia*, Chapter 13, quoted G. G. Coulton: *Medieval Panorama* (Cambridge: The University Press: 1939), pp. 107-108.

For similar happenings in modern times, with names and dates, see *The Book of the Damned*, pp. 251-52.

Who can doubt, Gervase sternly asks, 'after the publication of this testimony, that a sea lieth over this earth of ours?' Plainly there must have been waters above—though not very far above—the firmament to support these aerial voyagers. Unless, of course, one prefers to believe that the ship had been swept inland by a waterspout and was even at that moment precariously balanced on top of it.

Both of these theories will most likely seem as fantastic to the common reader as the yarns whose persistence they seek to explain. He will hesitate to believe that his daily paper prints myths, and that his radio echoes medieval controversies. He prides himself, above all, on being 'modern' and 'scientific' and on 'looking forward.'

Yet we are nearer the past than we know, and spooks and demons play leap-frog with dreams of plastics and television in our minds.

HIGH THOUGHT ON A LOW PLANE

ZOOLOGY was formerly the handmaiden of ethics. Animals were studied not to observe their actual characteristics but to find moral examples in their nature or behaviour. Topsell's *Historie of Foure-footed Beastes*, a popular book on animals published in 1607, avowed its purpose to be the leading of men to 'heavenly meditations upon earthly creatures' and was particularly recommended for Sunday reading.

In such works morality naturally took precedence over accuracy. Many 'impossible falsities,' said Sir Thomas Browne, 'do notwithstanding include wholesome moralities, and such as expiate the trespass of their absurdities.'¹ Today it might be doubted whether morality could possibly be wholesome if grounded on falsity, and the very essence of modern thinking is that nothing can expiate the trespass of a deliberate absurdity. But this was not the temper of earlier times, and some very strange things were attributed to various animals in order to enhance their otherwise considerable moral usefulness.

Thus, in the famous *Physiologus*, the panther was described as an amiable beast, friendly to all creatures but the dragon. It was the panther's habit to sleep for three days after eating, and on awakening to exhale a rare perfume that drew all men to him. That this panther bore little resemblance to an actual panther is irrelevant, for his function was not to depict a soulless brute but to set forth a celestial truth. He

¹ Sir Thomas Browne: *Works* (Edinburgh: John Grant; 1927), vol. 1, p. 180.

typified Christ. The dragon was the Devil. The three days' sleep represented the descent into Hell, and the attractive perfume of his breath was the teachings of the Church. As a sort of footnote, his variegated fur stood for Joseph's coat of many colours and thus served as one of those happy connections between the Old and the New Testaments that our ancestors delighted to establish.¹

Every animal was thus pressed into the service of virtue. The whale was said to pretend to be an island and to submerge treacherously when unwary sailors had landed on his 'scaly rind.' In so doing he typified the Devil who lulls us into false security that he may destroy us. The beaver when hunted for his testicles bit them off and cast them to his pursuers, showing men that they must give up wealth to save their souls. (Beavers' testicles, it should be explained, were highly prized: they help abortion, says Ogilby, cure the toothache, and, when minced, add a delicate flavour to tobacco.²)

Quaint though such fables now seem, their underlying idea, that the nature and conduct of animals is a comment on human morals, is still strong and leads, now as then, to strange misrepresentations. Animals are yet, to many people, little furry parables, and there is a widespread determination to find proof of a supernatural order in their habits. Mr. Ernest Thompson Seton, the self-styled 'Singing Woodsman,' whose popular nature stories 'convey subtly and unconsciously the higher beauty of the moral laws which nature has set up,' even went so far as to write an entire book to prove that all living things obey the Ten Commandments. He used incidents from animal life to illustrate at least the

¹ *The Old English Elene, Phoenix, and Physiologus*, ed. Albert S. Cook (New Haven: Yale University Press: 1919), pp. 75, 77.

According to the editors of the *Cambridge Bible* (Genesis, p. 351, n. 3) the coat of many colours is itself an error, due to a mistranslation; it should be 'a long garment with sleeves.'

² John Ogilby: *America* (London: Printed for the Author; 1671), p. 174.

danger of theft, murder, covetousness, adultery, and disregard of parental wisdom, but had some difficulty in making zoology support monotheism and oppose perjury. The prohibitions against the making of graven images, working on Sunday, and swearing were, apparently, too much for him, for he sneaked off at the end of the book without having alluded to them. It would have been hard, of course, to fit them into the daily life of the woodchuck and the wombat.¹

But he was on the right track. That's what the public wants out of animals, now just as much as in the Middle Ages. It is really astonishing that a modern moral bestiary has not been written. So much new has been learned, and it could all be applied to human life. Parasitism, for instance. We think we are pretty good at it, but we don't know the rudiments! The most ruthless gangster is a sentimentalist compared with the skua, a gull that power-dives on its victims, frightens them into disgorging in mid-air, and eats the meal—often before it reaches the ground—which they have obligingly predigested. The human gigolo maintains some independence, but the male bonellia spends much of his undignified life *inside* his female, attached to her excretory organs.

Those who seek natural justification for free enterprise may certainly find it. Dog may or may not eat dog, but almost every living thing eats some other living thing. Spiders eat flies, and some flies eat spiders. The mayfly's eggs are liberated only by the rotting of her body—youth must be served! Young whelks are born in sealed capsules, where their only possible food is one another—wholesome competition! Insects eat so many plants that it is almost a comfort to reflect that some plants eat insects. But even the

¹ Ernest Thompson Seton: *The Natural History of the Ten Commandments* (New York: Charles Scribner's Sons; 1907). The comment on Mr. Seton's stories is from the pen of a reviewer on the *Brooklyn Eagle*.

most rugged individualist might be a little disturbed to learn further that some insects eat the plants that eat insects and still others eat what is left of the insects that the plants have eaten—though they have to be careful, as a certain species of bird hangs around waiting to eat *them*.¹

Termites alone would furnish matter for a score of editorials. Their workers are nearly blind, and hence can't strike (score one for capital); but the warriors can't feed themselves, and hence are wholly at the mercy of the workers (score one for labour); and the queen is reduced—or, rather, enlarged—to a vast reproductive organ (behind which cowers the timorous king), squeezing out sixty eggs a minute, year on end, and devoured by her subjects the moment she falls behind schedule (score one for management).

But the popular moralist, unaware as yet of the rich harvest awaiting him in any zoology textbook, confines himself for the most part to generalities. He particularly loves to contemplate the 'wonderfulness' of animals' 'instincts,' those marvellous attributes which, even more than the sight of a dead sparrow, remind us of supernatural solicitude.

One of the most common of the 'instincts' is the ability to foretell the future. Sometimes it is thought to be wholly unconscious, as when furred animals anticipate an unusually severe winter by growing exceptionally heavy pelts—a folk belief that is pathetically refuted by the vast numbers of such creatures that perish in any hard winter. Sometimes it is thought to be very near the level of consciousness, as when beavers and squirrels make provision according to the mildness or severity of the approaching season. It can be exceedingly subtle, as when crocodiles lay their eggs at exactly

¹ See pp. 6-7 of 'Carnivorous Plants and "The Man-Eating Tree"' by Sophia Prior, Botany Leaflet 23, Field Museum of Natural History, Chicago, 1939.

what *will be* the high-water line of the Nile. Or it can be just downright spooky, as when ravens and magpies foretell disasters, locate treasures, utter timely warnings, and expose murderers.

The last is due, no doubt, to their possessing to a high degree that 'awareness of death' common to all animals. Thus a United Press dispatch from Hartford, the day after a dreadful circus fire in July 1944, averred that the larger mammals were deeply moved. Gargantua, the gorilla, was said to be wailing disconsolately. A lion refused to eat. 'A tiger crouched on the floor of his cage and mewed mournfully.' 'Circus folk,' with something of their own to worry about, declined to comment on the phenomenon, but 'a roustabout' informed an eager reporter that 'the animals just know when death is near.' It is to be regretted, however, that the Chicago paper that published this information under a two-column head did not send another reporter to the stockyards to see whether these intimations of mortality were shared by the Ungulates.¹

They ought to have been, because, as everyone knows, animals are especially aware of the approach of their own deaths. The wolf, sensing his dissolution, deserts the pack to spend his last hour in solitude. The dying swan breaks a lifelong silence to sing a sweet finale. The phoenix builds his cinnamon pyre, and elephants set out for their secret graveyard. Only the rat does anything to forestall his fate.

The teleological nature of the 'instincts' with which animals are thought to be endowed is frequently supported by the assertion that all animals are born with the skills and knowledge essential to their preservation—an assertion whose falsity ought to be apparent to anyone who has ever watched newborn kittens or puppies. They are blind. They have no

¹ The *Chicago Sun*, July 8, 1944, p. 5.

sense of direction. They don't know their own mother, and they can't tell a teat from a teaspoon.

Actually, all animals above the level of fish are incredibly helpless at first. Young birds and young bats must be taught to fly. Thousands of young seal and young sea lions are drowned every year. They never learn to swim 'naturally'; the mother has to take them out under her flipper and show them how. Birds sing without instruction, but they do not sing well unless they have had an opportunity of hearing older and more adept members of their species. Older harvest mice build better nests than beginners. Frank Buck says that the young elephant does not seem to know at first what his trunk is for; it gets in his way and seems more of a hindrance than a help until his parents show him what to do with it. Insects, indeed, seem to start life completely equipped with all necessary reflexes, but even there the concept of 'instinct' seems to require some modification, for they improve their talents with practice. Young spiders, for example, 'begin by making quite primitive little webs, and only attain perfection in their art in course of time;' and older spiders, if deprived of their spinnerets, will take to hunting.¹

Even eating, which one would assume to be 'instinctive' if anything is, seems to be, at least in part, an acquired skill. Newborn ducks do not appear to know how to swallow. Chicks cannot at first distinguish their food from any other substance, and are completely at a loss to know what to do

¹ For the seals and the sea lions, see Alan Frank Guttmacher: *Life in the Making* (London: Jarrolds; 1934).

For the harvest mice, see F. Alverdes: *Social Life in the Animal World* (London: Kegan Paul).

For the young elephants, see Frank Buck: *Animals Are Like That!* (London: Robert Hale; 1941).

For the spiders, see Johann A. Loeser: *Animal Behaviour* (London: Macmillan and Co., Ltd.; 1940), p. 63 *et passim*. William Rowan: *The Riddle of Migration* (Baltimore: Williams and Wilkins; 1931), p. 23, says: '... it is usual to find old birds much more deft and individualistic in nest building than the immature.'

with it until the mother shows them. In an experiment young moorhens starved to death with food before them because they were not shown how to peck.¹

Yet in folklore newborn animals are endowed with elaborate knowledge and patterns of conduct. One often hears, for instance, that many creatures are born with an 'instinctive' ability to recognize their natural enemies. Young chicks, we are told, scatter frantically for cover if an aeroplane passes overhead, apparently under the impression that it is a hawk, though they have never seen or had any experience of a hawk. There are many ludicrous and touching anecdotes of the 'instinctive' fear that monkeys bred in captivity have shown at the sight of a garden hose or something else that resembled a snake. Yet the Yerkeses, who have observed more monkeys probably than anyone else now living, assert that all talk of this nature is nonsense. When a monkey fears a snake, they say, it is most likely in response to some individual experience.²

Another popular delusion is that gregarious animals are models of mutual assistance. Many animals, we are told, 'appreciate the need of sharing with a comrade in distress' and exact stern retribution for injury done to a loved one. Bears, Daglish says, will travel 'scores of miles, if need be, to avenge the loss of their young,' and herds of seal will fall 'in a body on the foe responsible for the hurt suffered by their comrade.'³ (One can imagine how delighted a hungry polar bear would be to be attacked by a herd of indignant seal!)

The vendetta is particularly dear to writers of animal stories, each vying with the other to show a more 'chivalric'

¹ Loeser: *Animal Behaviour*, p. 56.

² Robert M. Yerkes and Ada W. Yerkes: *The Great Apes* (New Haven: Yale University Press; 1929), p. 157.

³ Eric Fitch Daglish: *The Life Story of Beasts* (New York: William Morrow and Company; 1931), p. 170.

heart in his hero. At the bottom of the scale are personal grudges, such as that held by Henry Williamson's baboon, T'Chackamma, who brings the Boer Van den Wenter to a bad end for having once beaten him. Higher are those who, like Albert Payson Terhune's Tam O'Shanter, risk not only life but reputation to avenge a 'chum.' Higher still are those who give their all for love, like Seton's great wolf Lobo who dies of a broken heart when Blanca, his sweetheart, is no more. But highest of all are those who, like Wahb, the grizzly, or Foam, the razor-back hog, devote their lives to tracking down the murderer of their mothers. And sometimes even more delicate considerations prevail, as when the little rabbit, Raggylug, encompasses the death of a coarse buck rabbit who had made improper advances to his mother and 'treated her shamefully.'¹

Such altruism would obviously be more effective if organized and directed, and so it is hardly surprising to find numerous stories of animal societies with governments, leaders, and even armies. Everyone says that crows and other creatures post sentinels to warn of approaching danger, though that they have daily drills and a form of selective service is not so generally known.²

Many animals are believed to have a system of defensive signals. Beavers are thought to slap the water with their flat tails, rabbits to thump with their hind legs, quail to drum with their wings, and so on. Some go further and have special devices to keep their sentinel alert. Thus cranes—says Pliny, and many have echoed him—require those on the watch to

¹ Williamson's 'T'Chackamma' and Terhune's 'The Grudge' are reprinted in *Famous Animal Stories*, edited by Ernest Thompson Seton (London: John Lane; 1933). Lobo and Raggylug appear in Seton's *Wild Animals I Have Known* (London: Hodder and Stoughton; 1914). Foam is in the same author's *Wild Animal Ways* (London: Hodder and Stoughton; 1916). Wahb has—and deserves—a volume all to himself: *The Biography of a Grizzly* (New York: The Century Co.; 1900).

² That they so do is stated by Mr. Seton in *Wild Animals I Have Known*.

stand on one foot and to hold a stone in the other, so that if they should doze the stone will fall from their relaxed grip with an awakening splash. The sentinels of the saiga antelope, we are told by a modern scholar, never 'betake themselves to rest' until relieved, and the relieving sentinel always presents the antelopean equivalent of a password and advances to his station with something of military formality.¹

Baboons go even further. They plan forays, employ weapons, drill, and even (if we may trust the *New York Times*) execute, though imperfectly, the manual of arms.² Arabian baboons, says Alverdes, when 'on the march' establish van- and rear-guards and protect their flanks by scouts. They administer first aid to their injured and, if defeated, retreat in good order, bearing off their wounded and dead.³

All this implies leadership, and the popular imagination has been most active in furnishing it. No vulgar conviction is more settled than that groups of gregarious animals are always dominated by a wise old leader. Man himself is a gregarious animal, and his own leaders, though frequently old, are rarely wise. But the 'instincts' of the lower animals are thought to move them to select unerringly the wisest among them for leader and to accept his guidance with unquestioning obedience.

Pliny, who is never timid in his convictions, says that

¹ Alverdes: *Social Life in the Animal World*.

² The *New York Times*, September 27, 1935, p. 3, col. 5. If the reader is curious to know why the correspondent of a great newspaper sent out such stuff as 'news,' let him read Evelyn Waugh: *Waugh in Abyssinia* (London: Longmans, Green and Co.; 1936).

Popular baboon lore is pretty well summarized in Henry Williamson's 'T'Chackamma,' which a recent editor characterizes as 'very exact realism.' In this story the baboons are represented as meeting in congress to plan a raid. They listen attentively to a harangue from their leader and then proceed to carry out his instructions. They advance to battle in military formation and retire in good order, bearing their wounded with them. Their discomfiture on the particular expedition described was due to the unfortunate fact that some of them got drunk.

³ Alverdes: *Social Life in the Animal World*.

oysters, in particular, have 'one special great and old one' to guide them—one possessed of 'a singular dexteritie and woonderfull gift to prevent and avoid all daungers'; and the pearl divers, knowing this, seek always to capture this leader first, for once he is caught 'the rest scatter asunder and be soone taken up within the nets.'

Despite 'The Walrus and the Carpenter,' the most intenerate sentimentalist would hesitate today to repeat any account of daring leadership among oysters, but no such reluctance is felt in regard to the higher animals. Geese, sea-lions, wolves, goats, gophers, and monkeys are among the species who are reported as having leaders to whom the common herd render homage and from whom, in return, they receive guidance and protection.¹

No such reports, however, come from those who, free from sentimental bias, have watched animals with scientific detachment. 'Gregarious mammals,' says Bradley, 'by and large, are the least truly sociable, maternal and intelligent of the so-called higher animals.' Loeser is even more emphatic: 'Nowhere in the animal kingdom,' he says, 'is there any question of community in the true sense. It is always the egotistical satisfaction of certain special sensations and nothing more; . . . that is, there is never any action which aims at helping another individual . . . animals act in unison, but each only for itself.' Allee says that most social organization among animals is only 'an unconscious kind of mutualism.' Zuckerman found 'no obvious leadership' among the baboons that he observed in South Africa and 'no evidence of any kind' of planning or order in their forays. All stories of de-

¹ For typical pictures of the animal 'leader,' ruling sternly but wisely, see Seton's 'Lobo, King of the Currumpaw' and Frank St. Mars's 'The White Terror' (in *On Nature's Trail*: New York: George H. Doran Co.; 1914), a story which we are told 'gives an idea of Rat conditions.' The leader is always honoured and obeyed by all, loves and is loved by the most beautiful female in the pack. His sway is despotic, though 'by the law of the tribe' he may be called to account for gross malfeasance in office.

liberate aid or rescue, he feels, 'may be disregarded.' He grants that monkeys often rush up at the cry of a wounded companion, but he points out that as often as not they inflict further injury upon the injured one.¹

It is not likely, however, that such reports will have any great effect upon the popular belief, for at the bottom it is not zoological but moral. Men have a strange guilty habit of conferring their own impossible ideals upon animals and then goading themselves with shame at the thought of their inferiority to the brutes. Faber's statement that 'the furred folk perform their domestic duties honourably' is echoed in a thousand self-accusing minds.

Fifty years ago half the homes of America displayed—as an example, no doubt, to the males of the family—a steel engraving of a stag holding a pack of wolves at bay while behind him on a snowy knoll a doe and a fawn, wide-eyed but trustful, looked on with complete confidence. But the reproach with which this scene must have filled our grandfathers was unjustified, for the 'valiant endeavour,' as one writer calls it, 'of the males of various species of hoofed beasts to safeguard the helpless members of their bands' is, alas, a noble fiction. Stags in particular, it would seem, run away at the first hint of peril. 'When danger appears during the rut,' says Allee, 'the stags make off and rejoin the females when it is past.' Among the social animals, he concludes rather gloomily, 'only the termites have fully socialized males.' And the home life of termites would hardly make an inspiring picture for the parlour.²

¹ John Hodgdon Bradley: *Patterns of Survival* (London: G. Routledge and Sons; 1939).

Loefer: *Animal Behaviour*, pp. 89–90, 93.

S. Zuckerman: *The Social Life of Monkeys and Apes* (London: Kegan Paul, Trench, Trübner & Co.; 1932), pp. 193, 199, 293, 295.

² For 'the valiant endeavour,' see Daglish: *The Life Story of Beasts*, p. 128. W. C. Allee: *The Social Life of Animals* (New York: W. W. Norton & Co., Inc.; 1938), pp. 260, 261.

The fabled leaders of other species stand up no better under impartial scrutiny. When a herd of caribou is fleeing from wolves, the old bulls, it is true, bring up the rear and so expose themselves to being the first victims. But they have no choice: they just run slower than the cows and calves. Tennyson's 'many-wintered crow' that led 'the clanging rookery home' was probably, in the light of modern investigation of the habits of birds, either some obtrusive vulgarian who clamorously thrust himself in front of the flock and kept glancing back to see which way to turn, or else a complete fabrication like (one suspects) Brehm's 'old male Arabian baboon' who, leaning—like Moses—on young adjutants, directed the course of a battle.¹

But the wise and chivalrous old male leader will not be driven out of folk zoology merely because observers in the field have failed to identify him. His continued existence as a myth is assured by the fact that he is a corollary to the greater myth of male superiority. There is a great deal of joking, of course, about the female of the species being more deadly than the male, and all that sort of thing; but the gist of the jokes is that everyone *knows* that the male is, actually, the stronger. He is ordained by heaven to rule, sanctioned in his power by Holy Writ, and confirmed by zoology.

By folk zoology, that is. Scientific zoology carries no such confirmation. Throughout all species, indeed, the balance of dominance probably favours the female. Among mam-

¹ For the caribou, see Vilhjalmur Stefansson: *The Friendly Arctic* (London: G. G. Harrap).

Tennyson, *Locksley Hall*, stanza 34. (That the 'leaders' of many flocks of birds are only following in front has been demonstrated by slow-motion pictures that show that the flock often swerves first and the pseudo-leader swerves later in order to maintain his position.)

For Brehm's Mosaic baboon, see Alverdes: *Social Life in the Animal World*.

mals and some birds the male is master, but among the fish and amphibia he is often subject to indignities. Female sea horses and Chilean frogs lay their eggs in the male and let *him* endure the awkwardness of pregnancy, and, in almost all species of fish that bother to care for their young, the duties of that care devolve upon the male.¹

In the insect world—and this is still the age of insects—the situation is truly alarming. Among wasps, bees, and ants, the male has been reduced, in Wheeler's phrase, to 'a mere episode in the life of the female.' Female spiders frequently satisfy the hunger engendered by the exertions of love by eating their partners, while in other species of insects parthenogenesis has dealt the male a blow compared with which being eaten is practically a compliment: it has removed all need for him except now and then in a series of generations.²

Such performances, of course, may be dismissed as cosmic whimsies, the products of those merrier moments that G. K. Chesterton believed God had at the time of the Creation. But a really disturbing jolt comes from those recent studies in embryology and vital statistics which show with dismal plainness that the human male is, biologically, definitely weaker than the female. A very high proportion of aborted embryos are male. More boys are born than girls, but this seems to be an extra allowance for weakness, as one third more boys than girls die during the first year of life. And this preponderance of mortality continues through all stages of life. By maturity it has removed the lead the males had

¹ Alverdes: *Social Life in the Animal World*, P. Chalmers Mitchell: *The Childhood of Animals* (New York: Frederick A. Stokes Company; n.d [c. 1912]). E. G. Boulenger: *The Aquarium Book* (London: Duckworth; 1925).

² William Morton Wheeler: *Social Life Among the Insects* (London: Constable and Company).

at birth, and by old age there are approximately two women surviving for every man.¹

No one knows why. Perhaps, in some way that is not yet understood, it is due to the fact that females have more genes than males—that males are, in a way, imperfect females. If this should be the cause, it would be a curious reversal of the old theological assumption that a woman was an imperfect man.

The blow dealt to masculine complacency by these researches would be insupportable, perhaps, were it not that other investigations have at the same time weakened an equally sacred myth on the other side—the myth of ‘mother love’ among animals, a belief to which all popular animated nature pays devout homage.

That many vertebrate mothers do show a passionate attachment to their young cannot be doubted, but what has been brought into question is the ‘instinctive’ or unvarying nature of that attachment and, particularly, the belief that it is exactly the same emotion as that felt by a human mother for her child.

The most heart-rending stories are told. Thus Daglish relates how female baboons cling to their dead babies. The mother clutches the little body to her and will not give it up, carrying it about long after it has lost all living semblance and ‘making the most pathetic attempts to induce it to feed and play.’ It is apparently a common spectacle, for Yerkes had also noticed it and had been moved. But Zuckerman discovered that any baboon will show the same attachment to anything furry—a dead rat, a muff, or a feather duster—and suggests that what appears to be an illustration of extreme parental devotion is more probably a manifestation of

¹ See Chapter 4, ‘The Boy-Girl Ratio,’ Chapter 6, ‘The Weaker Sex: Males,’ Chapters 14 and 15, ‘The Sick List: I’ and ‘The Sick List: II,’ in Amram Scheinfeld: *Women and Men* (New York: Harcourt, Brace and Company; 1944).

a basic urge, vital to the creature's preservation when it was young, to cling to a hairy coat.¹

Of course, even in common knowledge, there are regrettable exceptions to Nature's most sacred canon. Kangaroos in flight have been seen to heave their young out of their pouches in order to be free of their encumbrance, and sows are notorious for devouring their own farrow. But such deviations when not condemned as 'unnatural' are excused as salutary discipline or misguided passion. Some even go further and see them as acts of nobility or heroic necessity. Seton professes to have had personal knowledge of a vixen who when her cub was caught in a trap 'brought the innocent little one a piece of poisoned bait that it might die rather than live in captivity.' The *Chicago Sun*, on May 1, 1944, assured its readers that the lioness 'destroys her offspring rather than have the cubs grow up in slavery.' And *Life*, two weeks later, commenting on a lioness that had eaten one of her cubs, stated that the infanticide had been forced upon her by an unfortunate insufficiency of teats and had been performed 'with pitying eyes' as 'an act of mercy.'²

Lame though such explanations are when applied to the mammals, they become even lamer as we descend the scale. Female fish eat their own eggs a great deal, but even *Life* would probably grant that this was due rather to the creatures' personal liking for caviar than to any high-minded resolve to prevent their fry from growing up into fillets or spectacles in an aquarium.

Farther down still, among the invertebrates, the whole thing becomes ludicrous. Even popular sentimentality seems

¹ Daglish: *The Life Story of Beasts*, p. 133. Zuckerman: *The Social Life of Monkeys*, pp. 298, 301. The pathos is not so apparent in another manifestation of this 'instinct': Zuckerman says that a male baboon will lug the female he has killed about with him in the same manner.

² For the careless kangaroo, see Loeser: *Animal Behaviour*, p. 121. Seton's vixen appears in his *Wild Animals I have Known*. *Life*, May 15, 1944, p. 46.

to conceive of altruism as a function of the backbone. A self-sacrificing cockroach or jellyfish would be inconceivable. There are those, of course (Fabre among them), who have none the less tried to discern mother love even in these depths. They point out that among the beetles, solitary wasps, and spiders the most elaborate preparations are made for the care of the young. But because in many species the parent dies before the young are hatched, her activities must in some obscure way be conducive to her *own* comfort. It is well known that ants lick their eggs with assiduous care and carry them off frantically when danger threatens. But the eggs exude a pleasant-tasting juice, and the ants bestow equal care upon the grubs of the parasitic *Lomechusa strumosa* which also exude a tasty juice but which grow up to eat the ants' own eggs and grubs.¹

¹ Wheeler: *Social Life Among the Insects*.



BIRDS IN THEIR LITTLE NESTS

THE sentimentalist who is discouraged by the habits of the insects may revive his faith in the 'natural' sanctity of the domestic virtues by contemplating the birds. Granted, that is, that he doesn't contemplate them too closely.

Among them, indeed, he may find what he is seeking. The nest, often lined with down from the parents' own breasts, has become a synonym for the habitation of love. The prettiness of the eggs, the pathetic helplessness of the young, and, above all, the devotion of the mother form an ideal of family life that men in all times and places have found inspiring.

Particularly the mother's devotion. It is recognized, to be sure, that the male sometimes chivalrously assists, but the chief credit always goes to the female. The patience with which she sits upon her eggs, the industry with which she labours to fill the fledglings' gaping beaks, and the bravery with which she attacks all who venture near have combined to give her more space under the heading of 'Mother love' in dictionaries of quotations than that allotted to any other creature.

And no doubt she deserves the honour. But modern researches have brought into serious question any sentimental interpretation of her activities.

Birds are now believed to sit on their eggs not in patient expectation of a blessed event but rather to obtain 'a certain soothing pressure and cooling surface' against 'hatching

spots' which develop on their breasts at the approach of the nesting season. These spots, areas of low-grade inflammation caused by moulting (due, it is said, to hormone action), are apparently irritating, and it is this irritation—or the desire to relieve it—that provides the chief motive for building a nest.

In those species in which the cock shares in the sitting, he too has hatching spots. In the species in which he does not share in the sitting, only the female has them. So that the 'gentle force' which the male of various species has been seen to employ to compel the female to relinquish her place on the eggs to him may not be, as it has been often interpreted, so much an act of chivalry as merely a desire to cool *his* itch for a while.

The inflammation of the hatching spots may serve to give the eggs just the proper heat they need for incubation, but that the parent's sole interest is in cooling her fevered skin is shown by the fact that if her breast is held for a short while in cold water she loses temporarily her urge to sit. Or if the surrounding temperature is raised, so that the eggs are no longer cool, many birds forsake them.

That birds have no particular attachment to their own eggs is well known to every farm boy. China eggs, or even doorknobs, content the broody hen. Sometimes, it is true, a bird will eject a strange egg from her nest, and the sentimental have seized upon this as evidence of a sort of family loyalty. But Professor Johann Loeser, whose investigations have established most of the foregoing facts, believed that the sitter is disturbed not by a strange egg but by a break in the uniform colour of the sitting. To test this, he took four eggs out of a nest containing five and substituted four others of the same size but of a different colour. Whereupon the mother bird threw out her own remaining egg. Further support for his theory is offered by the facts that a hen will

hatch a clutch of duck, guinea fowl, or pheasant eggs, but won't hatch a mixed clutch, and that cuckoos' eggs are very near the colour of those of their foster parents.¹

The impartiality of birds in feeding their young has similarly been shown to be more of an automatic response than a conscious act of altruism or wisdom. Parent birds seem moved to feed their young by some obscure chemical or physiological reaction to the sound of the chirps and the sight of the open beak—hence the brilliant colouring of the inside of the chicks' mouths and the sharply defined bright edging of their beaks. If the mouth of the fledgling is sealed, the parents seem to make no effort to feed it. And that the feeding impulse is something more than maternal is shown by the fact that young birds in their first plumage will often feed birds of another breed, even in another nest, if the proper gape and chirp are presented.²

The response seems indeed to be proportionate to the clamour. It is apparently by virtue of his larger mouth and louder cry that the young cuckoo moves his simple foster parents to feed him to the neglect of their true offspring. What a dismal moral *that* offers!

Observers have long noticed that parent birds observe a strict sequence in feeding their young and have seen therein a rebuke to the favouritism that breeds dissension in human nurseries. But the grim Loeser holds that birds do not know how many young they have or which among them have or have not been fed. Their impartiality, he believes, is unavoidable. As a rule, he says, the parent bird approaches the nest from the same direction and the first chick encountered receives the food, although all open their beaks in frantic imploration. After each feeding the chick has to evacuate, and to do so—because of pressure, not prudery—it has to

¹ Johann A. Loeser: *Animal Behaviour* (London: Macmillan and Co., Ltd.; 1940), pp. 37, 108–109.

² *Ibid.*, p. 114.

hoist its posterior over the edge of the nest. This, however, cannot be done without giving up its place, which is immediately occupied by one of its closely wedged siblings, who thus becomes the one to be automatically fed on the reappearance of the parent, while the one previously fed is now the last of the row. Thus a sort of endless-belt feeding procession is set in motion, and all are equally well cared for. Ingenious, indeed, and—although composed of habit, greed, shoving, and the urge to evacuate—probably a more reliable device than a parental sense of justice.¹

Those to whom mechanistic explanations are repugnant will maintain, no doubt, that if Professor Loeser is right he has detracted from the beauty and charm of the universe and made the sum of things, by that much, dead and soulless. But such people forget (or, more likely, do not choose to admit) that much among the sum of things is cruel and ugly by the standards of charm and beauty they employ and that the mechanistic explanation lessens the unpleasant as well as the pleasant.

Thus, if Loeser by these theories robs folk zoology of one of its most touching details, he compensates, to some extent, by explaining away one of Nature's most shocking villainies. For millennia morality has been outraged by the monstrous ingratitude with which the young cuckoo often throws its foster brothers and sisters out of the nest in order that it may have the attention of the parents all to itself. But Loeser has shown that, although this process may be exceedingly unpleasant to the young hedge-sparrows, it is not a deliberate act of malice on the part of the cuckoo but, like sitting to ease the hatching spots, is merely an automatic response to a temporary skin condition. During the first few days of its existence, he says, while it is still blind and completely naked, the young cuckoo 'possesses closely-packed tactile

¹ Loeser: *Animal Behaviour*, p. 118.

organs on its back and sides, far in excess of the usual quantity.' Experiments have shown 'that when this spot is touched the young bird reacts as if it had been pricked with red-hot needles.' And so, burrowing into the nest and arching its back rigidly to escape the painful pressure of the other young birds (for, being the heaviest, it is always at the bottom of the nest), it all unknowingly forces them over the edge. When the ejection-spot has served its purpose it, like the hatching spots, disappears. Gruesomely ingenious—but its ingenuity is none of the individual cuckoo's contriving and cannot be held against him.¹

The ingratitude of the cuckoo has always seemed the more shocking because of the popular assumption that the nest is a home and one in which, but for such rare and regrettable exceptions, harmony always prevails.

There are two things wrong with that assumption. In the first place, despite the animated cartoons and the illustrations in children's books, nests are not little houses in which birds 'live.' They are incubators and cribs. Even at the time of sitting, the birds may 'live' at a considerable distance from the nest in some other tree. And in the second place, despite Dr. Watts's pious assurance that 'birds in their little nests agree,' men have no cause to hang their heads in shame at the thought of their quarrelsomeness compared with that of birds. There is indeed a form of social order among birds, first described by Schjelderup-Ebbe under the name of 'peck-order,' from the manner in which chickens establish precedence within their group; but it is a hierarchy of sheer force, maintained by ceaseless violence.²

¹ Loeser: *Animal Behaviour*, p. 128.

² W. C. Allee: *The Social Life of Animals* (New York: W. W. Norton & Company, Inc.; 1938), pp. 176-84. And see 'Group organization among vertebrates' by the same author, in *Science*, March 20, 1942, p. 289.

It is rare, even in the protected environment of a zoo, for a litter of cubs to grow up without one of them being killed by the others.

Birds are particularly gifted, in popular fancy, with supernatural awarenesses. The auguries of owls and jackdaws no longer carry the weight, at least among the educated, that they used to. But the belief that birds are living barometers and by their actions foretell the weather is widely held in rural communities, and the belief that migratory birds are guided in undeviating flight by some supernatural 'instinct' is almost universal.

Yet that birds can foretell the weather is not, says Coward, 'supported by any satisfactory evidence,' and it is plainly challenged by the definitely established fact that masses of birds in long flights frequently fly directly into weather conditions that prove disastrous to them.¹

As for the belief that migratory birds are guided by some mysterious 'winged thing's compass sense,' all that can be said in the present state of knowledge is that there is little to support it and a great deal to oppose it. Not very much is actually known about bird migrations, let alone the forces behind them, but the information that is slowly being collected by the laborious and prosaic means of scientific investigation suggests that migrating birds are guided by definite landmarks and memories. Stefansson noticed that migrating geese followed the arctic shoreline 'as cows do a winding trail,' and Coward observed the same thing of migratory swallows in Norfolk. Furthermore, young birds lose their way more frequently than is generally supposed.²

Birds do, plainly, possess a remarkable power of orienta-

¹ T. A. Coward: *The Migration of Birds* (Cambridge: The University Press; 1929), p. 84.

² William Rowan: *The Riddle of Migration* (Baltimore: The Williams and Wilkins Company; 1931), p. 84, believes that 'magnetic sensibility' is 'the only possible proposition in our present state of knowledge,' but he confesses that there are many difficulties in the way of accepting it.

Vilhjalmur Stefansson: *My Life with the Eskimo* (London: G. G. Harrap).
Coward: *The Migration of Birds*, pp. 36, 128.

tion, but there is little proof that it differs in anything but degree from the same power in other animals. Homing pigeons are usually cited as irrefutable proof of the existence of such an 'instinct.' Everybody 'knows' that they can be taken in closed baskets for hundreds, even thousands, of miles, over territory completely unknown to them, and that upon release they will circle for a few moments, to let their mysterious sense get its bearings, and then head straight for home.

Everybody, that is, except those who work with homing pigeons. Those who devote their lives to training such birds maintain that they have to be taught. That is, they have to be released, on successive occasions, at longer and longer distances from the loft (beginning at ten feet!) and rewarded for each successful return—for there may be many failures at first—with a piece of food. They say that a homing pigeon cannot be taken completely out of sight of any known landmark and expected to return—which would suggest that it is guided by visual memory, as are all other creatures that are able to find their way back to a given spot.

Visual memory, of course, is mysterious enough. But it is not mysterious in the popular sense. It doesn't smack of the occult. It doesn't permit the narrator of the event to seem to be in God's confidence.

That the power of the carrier pigeon to find its way back to the loft is not some supernatural 'gift' is further evidenced by the fact that it varies widely among members of the same species and has been steadily improved by selective breeding. The possible accuracy of the feats commonly ascribed to carrier pigeons may be judged by the fact that the Signal Corps of the United States Army—by far the largest breeder and trainer of them—does not expect its best birds to return over any distance exceeding twenty-five

miles, and then only over territory with which they have been familiarized by repeated training flights.¹

Bees and wasps, which are also popularly credited with mysterious homing powers, do not leave the hives or burrows without first making a flight of orientation, or 'locality study,' to fix in their 'mind' ('sensorium,' Wheeler more accurately calls it) their relation to surrounding objects.²

Another mystic link between birds and the Great Beyond is forged by those who insist that cocks crow with chronometric regularity. Some say they crow only on the hour; others maintain that they crow every twenty minutes. Formerly they were thought to observe sidereal time, each cock being an instinctive astronomer and knowing (as Chaucer says with a smile) the exact time for his own town. Today, when most people are unaware that the actual time differs with every town, the roosters are apparently assumed to have even greater powers. For if they crow by the clock, as they are said to, they must first reckon sidereal time for that locality and then make an adjustment to suit the local conformity to the national time zone. Of course railway time and war time and daylight-saving time wouldn't

¹ 'In the homing of pigeons it seems certain that sight and topographical memory are the salient factors.'—William Rowan: *The Riddle of Migration*, p. 81.

See an interview with Technical Sergeant Clifford Poutre, who was in charge of the training of messenger pigeons for the Signal Corps of the United States Army, at Fort Monmouth, N.J. The interview was printed in the *New York Times Magazine*, April 27, 1941, pp. 14, 19.

One of the minor news items of D-Day was that not one of the six carrier pigeons released on the Normandy beach by an American captain had returned to England. This bit of news was censored on the ground that casualties may not be disclosed until the next of kin have been notified (the *Chicago Sun*, June 14, 1944, p. 1), but it is more likely that a compassionate censor felt that the American public, already agitated, ought not to be further shocked by being told, at that moment, the facts about homing pigeons.

² William Morton Wheeler: *Social Life Among the Insects* (London: Constable and Company).

bother them, because they wouldn't have to care what hour it was so long as they crowed *on* the hour.

Most vulgar errors about birds are confined to such general delusions as the foregoing. Save for a few domesticated species, birds are too swift and shy for any but highly observant persons to know anything at all about them. Yet there are a few specific errors, based on false analogies or just pure myth.

There is an amusing belief among many country boys, for instance, that an owl has to turn his head to watch you and must watch you if you are near him, so that if you will only walk completely round him he will wring his own neck.¹

The peacock is thought to be so ashamed of his ugly feet that, if he chances to see them while displaying, he will let his gorgeous tail fall out of sheer humiliation and chagrin. The fact is true, but the interpretation is definitely coloured by the old desire to find a moral lesson in animal behaviour. A peacock must keep his head erect in order to advance his train, so that when his head is lowered his train, of necessity, falls—a condition to be seen, in a lesser degree, in a turkey cock. But the ascription of this unavoidable sequence of events to wounded vanity is pure fantasy.

The most vital of all the mythical birds, though, is the ostrich that hides its head in the sand at the approach of danger. It has outlived the roc and the phoenix, and will probably be with us long after Keats's nightingale, Shelley's skylark, and Poe's raven have been forgotten. Immortal bird, indeed! It is too precious to die. Women can get on without the plumes of the ordinary, living ostrich, but what would politicians, preachers, and prophets do without the convenient metaphor of this ornithological fiction?

¹ Otis W. Caldwell and Gerhard E. Lundeen: *Do You Believe It?* (New York: Doubleday, Doran & Co.; 1934), p. 119.

Next to the fact that it hides its head in the sand, the best-known thing about the ostrich is that it can digest iron. The same cartoon humour that shows goats munching tin cans depicts ostriches swallowing alarm clocks, monkey wrenches, and cylinder heads. The belief is time-honoured. Three hundred years ago the ostrich was always represented with a horseshoe in its mouth; without this, it would have been thought to be some other species of bird.

The extent of this belief and the harm that it causes is almost incredible. There is probably not a menagerie in existence that has not lost several birds in consequence of their being fed nail files and other lethal titbits by zoo-haunting zanies. Mr. E. G. Boulenger, for many years a director of the London Zoological Society, lists the post-mortem findings in an ostrich that had died a few days after a holiday had burdened the zoo with an unusually large number of curious clodpolls. From the organs of the unhappy bird were extracted 'two handkerchiefs, three gloves, a Kodak film spool, three feet of thick string, a pencil, a part of a celluloid comb, a bicycle tyre valve, an alarm clock winding key, a glove fastener, a piece of wood five inches long, part of a rolled gold necklace, two collar studs, a penny, four halfpennies, two farthings, and a Belgian franc piece—a collection which is now on exhibition in the museum of the Tropical School of Medicine.'¹

How rarely does it occur to *Homo sapiens*, gloating at the zoo, that one of the purposes of the bars, moats, walls and fences is to protect the animals from *him*!

¹ E. G. Boulenger: *Searchlight on Animals* (London: Robert Hale & Company; 1936), p. 212.

THE FURRED FOLK

MERELY to list popular misconceptions about four-footed animals would fill a volume. Nothing has caught man's attention more forcibly than those living creatures which, from the beginning of time, he has perceived to resemble himself. But the confused impressions of them that he has accumulated speak ill of his ability to accept the evidence of his senses.

Familiarity seems to breed no contempt for fiction. Those animals that have been most observed are the subjects of the most delusions. One would think, for instance, that dogs would be the least mysterious of all quadrupeds, whereas there are probably more old wives' tales about dogs than about all other animals put together. Perhaps the acuteness of their sense of smell has something to do with it. Man's consciousness is predominantly visual—'seeing is believing,' we say—and few people are able to imagine what an olfactory consciousness might be like. Virginia Woolf tried it in *Flush*, but less gifted people find it easier to talk about 'mysterious instincts.'

And how they do talk! It is almost impossible to pass an evening in a group of ordinary, middle-class, well-to-do people without hearing some instance of a dog's supernatural powers; and the least expression of doubt or the slightest attempt at cross-examination is sure to provoke a great deal of warmth. Dogs are sacred in our culture¹ and

¹ In the vituperation that certain newspapers heaped upon President Franklin D. Roosevelt and his family when it was discovered that General Elliott Roosevelt's bull mastiff, Blaze Hero, had been given priority on an army

nothing about them is more sacred than their ability to foretell the future, to warn of impending calamities, and to sense 'instinctively' the death of a master or mistress who may chance at that moment to be far away.

Dog stories flow through the news in a never-ending stream. One day we read that a cocker spaniel, sent home from the Pacific by an aviation machinist's mate, 'intuitively' recognized his master's wife. The next day there is an edifying account of a Seeing Eye dog which at a concert sat through *God Save the King* 'with quiet dignity' but 'arose on all fours and stood with the rest of the audience' when *The Star-Spangled Banner* was sung.¹

In nothing is the clairvoyance of dogs more frequently manifested than in their ability to read character, particularly to perceive hidden villainy. Thus while the dull humans in *Little Dorrit* are deceived by the suavity of Rigaud, the little dog knows him 'instinctively' for what he is and, despite punishment by his gullible master, persists in his warning attacks until the villain is unmasked. Nor are such performances confined to literature. A Chicago housewife wrote in triumphant indignation to the salvage office of the WPB to say that her bulldog's growling had warned her that their wastepaper collector was dishonest. She had ignored the faithful creature's warning, however, only to find, after the collector had gone, that she had been short-changed four cents. The WPB promised to make up the deficiency.²

transport plane, there was a significant eagerness to exonerate the dog! See the editorial, 'Not Pooch's Boner,' p. 14, the *Chicago Daily News*, January 19, 1945, and the cartoon, 'Please, Folks, Don't Blame Me!', p. 1, the *Chicago Tribune*, January 20, 1945.

¹ The *Chicago Sun*, July 19, 1944, p. 17, and July 20, 1944, p. 17.

² The *Chicago Sun*, July 28, 1943, p. 7. Dogs were formerly thought to have a special ability to perceive the presence of supernatural beings. Pliny assures us that bitches, particularly bitch-whelps of a first litter, 'see strange bugges and goblins.'

Dogs are able to detect even temporary changes in character. Albert Payson Terhune tells us that a favourite dog of his 'would get up quietly after my second or third drink and leave the room.' The devoted beast, Mr. Terhune adds, 'seems to note and resent a subtle change in me.'¹

So established, in fact, is this mystic analytic power of dogs that it has never been explained why banks waste money on expensive alarm systems when a dog stationed at the door could at once give notice not only of robbers but of forgers, embezzlers, dealers in shady securities—and strange examiners. Perhaps bank managers do not want their employees to know when they have had one too many at lunch.

Like pigeons, dogs are thought to have a supernatural ability to find their way home across hundreds, even thousands, of miles of strange terrain. The newspapers are full of stories of dogs who have miraculously turned up at the doorsteps of baffled masters who had abandoned them afar. Against these stories, however, can be set the lost and found columns of the same papers, which in almost every issue carry offers of rewards for the recovery of dogs that, apparently, couldn't find their way back from the next street. Stefansson, who has had a great deal to do with dogs—sled dogs and huskies, dogs right in a state of nature if

In the *Odyssey* (Book XVI) the dogs of the swineherd Eumæus 'with a low whine shrank cowering to the far side of the steading' in the presence of Athene, though Telemachus 'saw her not before him; for the gods in no wise appear visibly to all.' Virgil, Statius, and Lucan agree that dogs have this special power of 'sensing' the supernatural. Defoe has a fine story ('A Remarkable Passage of an Apparition') of a witch who in Cornwall, in the year 1665, was identified as a 'spectrum' by 'a spaniel dog, who did bark and run away' as soon as he saw her.' The unwonted howling of 'the toothless mastiff bitch' in Coleridge's *Christabel* is ample warning to the reader, if not to the heroine, that the lady Geraldine is not a human being. And, just to bring it up to date, when Rick Fitzgerald, in Paramount's *The Uninvited* (1944), moves into a vacant house, his dog, faithful up to that time, deserts him, knowing at once that the place is haunted.

¹ The *Reader's Digest*, November 1941, p. 15.

ever dogs were—says that a lost dog ‘rarely finds his way back.’ One of his Eskimos, Emiu, a young hunter, almost lost his life in a blizzard, through his ‘foolishness in trusting his dogs to find the way back to camp’—Emiu’s idea that they would do so being, amusingly enough, a belief he had picked up from white men during a visit to Nome.¹ Eskimos have great faith in the supernatural, but they do not, unaided, share our faith in dogs.

The cat, more recently domesticated, is still something of a wild animal and hence an object of fear, and this fear is not lightened by its aloofness and fastidiousness, its nocturnal habits, and the sinister contrast between its outward placidity and its inner ferocity. Demons frequently assumed the form of a cat, and every witch had a feline familiar who accompanied her in her nightly flights and suckled at her pseudo-teats.

Many a person dislikes cats intensely. Usually it is just a ‘feeling’: he ‘can’t abide’ cats; he ‘just knows’ if one is in the room. Cats ‘bring bad luck,’ particularly if they are black. And so on. When pressed for some justification of their prejudice, some aver that cats ‘suck babies’ breath.’ Dr. Fishbein quotes Dr. J. H. Long of Lincoln, Nebraska, who insists that the charge is ‘horribly, positively, and absolutely true.’ ‘I have seen,’ he says, ‘the family pet in the very act of sucking a child’s breath, lying on the baby’s breast, a paw at either side of the babe’s mouth, the cat’s lips pressing those of the child and the infant’s face pale as that of a corpse, its lips with the blueness of death.’²

¹ Vilhjalmur Stefansson: *The Friendly Arctic* (London: G. G. Harrap).

² Morris Fishbein: *Shattering Health Superstitions* (New York: Horace Liveright; 1930), pp. 149–51. Dr. Fishbein is quoting—needless to say, with disbelief—from the *Nebraska State Journal* for 1929. Dr. Long professed to have heard of still other cases.

George A. Walker and Eleanor Saltzman found, in the course of a health survey which they made among the young men in the C.C.C. camps (and

Except for such moving passages, however, there is nothing to support the belief. Though cats have suffocated infants by lying across their faces, the belief is probably not even a distortion of these rare fatalities, but rather a survival of the old belief in vampires and succubi, coupled with fear of an animal which, however small, has a certain amount of independence and will defend itself if molested.

Two or three other beliefs concerning domesticated animals deserve a passing mention.

That bulls are infuriated by the sight of anything red is a 'fact' so deeply engrained in common thought and speech that it may constitute a breach of the peace to question it. Yet questioned it has been, and by such pundits as Professors Thomas N. Jenkins of New York University and G. H. Estabrooks of Colgate, both of whom maintain that bulls are colour-blind. And they are supported by Sidney Franklin, the matador, who says that it is the motion of the cloth, not its colour, that annoys the bull.¹

Equally taken for granted is the assumption that pigs are filthy gluttons, though dogs have more disgusting habits, chickens are more voracious, and horses and cows more insatiable. Corn can be dumped in a field in which pigs are being fattened and the pigs will eat as much of it as they want when they want it. But cows and horses will kill themselves with overeating if they are permitted access to unlimited quantities of certain foods.

The pig probably owes his bad reputation to the noise that he makes while eating and to the fact that, like his cousin the hippopotamus, he loves to wallow in ooze. That on many farms he can find only stinking muck to wallow

reported in *Hygeia*, January 1942, pp. 32-34; 59), that thirty-four per cent of those interviewed held this conviction.

¹ Albert Edward Wiggam: *Sorry But You're Wrong About It* (Indianapolis: The Bobbs-Merrill Company; 1931), p. 137. And see G. H. Estabrooks: *Man the Mechanical Misfit* (New York: The Macmillan Company; 1941), p. 129.

in is not his fault, and aside from this liking for mud baths, which he shares with many wealthy women, he keeps himself fairly clean. For sheer nastiness in what the advertisements would call 'personal hygiene' he is often surpassed by the sheep which, ironically enough, has become a symbol of purity.

The rat, domestic but not domesticated, is universally feared, and with good reason; but he has not, for some reason, inspired many myths. His chief activity, in popular lore, is deserting sinking ships. He is thought to have an 'instinctive' prescience of calamity that impels him to basely seek his own safety in good time. Whatever the zoological rat may or may not do, the metaphorical rat will always abandon his party and friends in the hour of peril.

Certain worthy souls who believe that any widespread belief must have 'a basis in fact' have tried to find a rational explanation of this one. An old hulk that is likely to sink, they have suggested, is probably leaking so badly that the rats are driven out of their nests in the hold. But this won't do. The common fancy doesn't want an unfortunate, inundated rat, but a clairvoyant, treacherous rat. Even the most high-minded human being would presumably desert a ship that was foundering at the wharf, but the proverbial rat leaves ships that are apparently seaworthy, ships that are about to meet some unexpected disaster of which there is no other intimation than the rat's departure.

This belief, by the way, is a good example of the sort of thing that can be asserted with confidence because there is no way in which it could be disproved. Countless sunken ships would have to be brought to the surface, their initial soundness established, and their holds thoroughly searched for the bodies of rats before there could be any data on which to base a refutation. Obviously, it is quite safe to go on stating that 'rats desert a sinking ship.'

The fox is also thought to be wise in his own behalf, though his wisdom is regarded as admirable. In popular lore he is particularly adept in deceiving pursuers, doubling back upon his tracks, running upstream, and riding upon the backs of sheep in order to throw the hounds off his trail. We are assured by one of our great nature writers, on the basis of his own 'personal observation,' that a fox will run along the rails just before a train is due, knowing that his scent—'always poor on iron'—will be 'destroyed by the train,' and knowing also that 'there is always a chance of the hounds being killed by the engine.'¹ Just where the fox procured a copy of the timetable is not made clear.

Such wisdom is naturally not confined wholly to dealing with hounds and their auxiliaries, the hunters. The same author tells us that he has known a fox to take poisoned bait intended for his own consumption and drop it slyly down the holes of other animals that had offended him. And the *Saturday Evening Post* recently enlightened its readers with a little item about a fox in southern Illinois that got rid of its fleas by backing into a pond while holding a tuft of wool in its mouth. The fleas 'had hastily crawled up through his fur and taken refuge in the wool' which the cunning fox released once he was completely submerged, thus ridding himself of his 'tiny tormenters.'²

Those who are unable to procure a back number of the *Post* will find the same story in John Swan's *Speculum Mundi*, 1643.³ He says he got it from the *Historia* of Olaus Magnus, 1555. Olaus doesn't say where he got it.

Of all wild animals, wolves probably figure most in folklore and are most completely misrepresented. The stereo-

¹ Ernest Thompson Seton: *Wild Animals I Have Known* (London: Hodder and Stoughton; 1914).

² *Wild Animals I Have Known*. The *Saturday Evening Post*, August 5, 1944, p. 66.

³ John Swan: *Speculum Mundi* (Cambridge: Printed by Roger Daniel, Printer to the University of Cambridge; second edition; 1643), p. 443.

typed wolves of popular fantasy run in packs, under a wise, usually 'grizzled,' leader. They are fiercely cannibal but capable of elaborate co-operation, often planning and executing diversions and ambushes. When they wish to conceal their exact numbers, the pack 'travels in single file, one animal treading in the footsteps made by another in the snow.'¹ They love human flesh, particularly that of brides and bridal parties.² They lay siege to villages and sometimes 'menace' cities of over a million. They have attacked regiments on the march and boarded cattle and express trains. Arctic travellers have perhaps foiled them at last by taking to the aeroplane, but even this has not wholly removed their threat, for at the sight of a plane they gather their forces and race hungrily below, 'leaping and barking at the bird-like machines.'³

Other characteristics are equally well known: they howl regularly at definite times in the night; their eyes emit an 'eerie' light which permits them to see in the dark; and some of them, especially those that live in India, adopt human children.⁴

Such is the common conception of the common wolf. The only comfort is that he used to be even more frightful, depriving men of their speech by a single glance and assuming human form in order to sneak up on his victims.

¹ F. Alverdes: *Social Life in the Animal World* (London: Kegan Paul).

² For a classic example of the eating of the bride, see Willa Cather: *My Antonia* (London: William Heinemann; 1914).

³ Between January and March, 1929, according to the *New York Times Index*, wolves devoured five Poles, sixteen Austrians, an aged Bulgarian priest, and many Czechoslovakians. They besieged villages in Moldavia, Bosnia, and Jugoslavia. They threatened Italy and 'menaced Constantinople.'

For wolves boarding trains, see the *National Geographic Magazine*, November 1926, p. 521.

For their attacking a regiment ('the British Hampshire regiment' in Siberia, between Omsk and Ekaterinburg) and threatening aeroplanes, see Vilhjalmur Stefansson: *Adventures in Error* (New York: Robert M. McBride and Company; 1936), pp. 178, 156.

⁴ See Chapter Seven of this book.

Time has dissipated these horrors, but enough febrile fiction remains.

The greatest shock to the magazine reader will be the assertion that wolves do not run in packs. He might be willing to grant that much else in lupine lore is untrue, but 'everybody knows' that wolves run in packs. One might as well deny that sheep graze in herds! Yet men who have had to do with wolves over periods of years do deny it. Stefansson, who has seen thousands of wolves in their natural state, says that he has never seen a pack of wolves—has never seen, that is, any aggregate of wolves in close association larger than the parents and cubs of one family. For more than twenty years he has amused himself by tracking down all accounts of wolf packs that have come to his attention, and not one has been authenticated to his satisfaction. He is convinced that wolf 'packs' are a vulgar error, and Dr. E. W. Nelson, former Chief of the United States Biological Survey, who joined him in the chase, shares his conviction.¹

So it is also with all accounts of wolves attacking people— young or old, brides, grooms, trappers, soldiers, Russians, Turks, or air-mail pilots. There is no authentic record of any human being's having been attacked and eaten by a wolf. For years the Biological Survey in Washington investigated every published account of the killing of human beings by wolves in the United States or in Canada, 'and without a single exception they proved to be purely imaginary.'² The unromantic fact seems to be that wolves, though (like many other animals) extremely curious, are also extremely cautious. Axel Nielsen, a trader who had spent fifteen years in northern Canada and seen plenty of wolves, expressed the opinion of many trappers when he wrote to *Time* about

¹ See Chapter V, 'Standardized Wolves,' in Stefansson's *Adventures in Error*, particularly pp. 164-65, and his *The Friendly Arctic* (New York: The Macmillan Company; 1924), p. 334.

² *Adventures in Error*, pp. 145, 147, 149, 152.

a wolf story that had been dramatized on the *March of Time*. 'In all my experience,' he said, 'all my questioning of Indians, whose language I speak fluently, I have never yet discovered a single wolf as dangerous as the ordinary pasture bull, an irritable sow, or a gander.'¹

Precision howling stands examination no better. Observations made in the Cincinnati and the Brookfield zoos failed to note any set time for recurrent howling, though this might be discredited on the grounds that it is only in the natural state that wolves are synchronized with watches.

The eyes of many animals are popularly assumed to emit light. This may be an echo of the Greek 'emanation hypothesis' of vision—the ancient belief that seeing was accomplished by the sending out from the eye of slender threads, thinner than gossamers, that touched the object seen. But it is more likely an erroneous assumption that the light reflected from the eyes of animals otherwise invisible in the dark is not a reflection but an emanation. That it is not noticed in human eyes is due to the absence in our eyes of the tapetum, though stories of men with luminous eyes are common enough.²

Many animals, including wolves, are thought to be able to see in the dark, though actually no animal can see in complete darkness. Some have eyes so constructed as to permit them to see in very little light, and some assist their eyes by special organs or special sensitivenesses. Many creatures have long tactile hairs on their upper lips that serve them as feelers, and others have developed remarkable sensitivity to vibrations in the air or water.

¹ *Time's* 'Letters,' January 21, 1935. (This is the short-lived separate publication of letters, not the 'Letters to the Editor' section of *Time* itself.)

² In *Notes and Queries* for March 29, 1941, p. 225, an anxious reader asks if any explanation can be offered for the luminous eyes of 'a bearded young Mormon' then preaching at Hyde Park Corner.

Among the latter are bats who, almost alone of winged things, can fly in total darkness. This ability, however, is due not to sight but to hearing—a fact whose discovery throws considerable light on the manner in which knowledge sometimes progresses.

For centuries it had been known that a blind bat was able to avoid objects, even fine wires, suspended in the line of its flight, and various experiments were devised to explain this fact. An Italian investigator, Spallanzani, found that if he sealed a blind bat's nose and mouth it could no longer avoid such objects, and hence he concluded that it was guided by a sense of smell. Modern experiments, however, have shown that this was an erroneous deduction. The blinded bat was unable to avoid objects in its path when its mouth was closed because it is guided by the echo of myriads of tiny squeaks that it sends out continuously while in flight, squeaks that bounce off obstacles and return in time to warn it to alter its course. Bats flying in open space emit these tiny shrill cries (up to 50,000 vibrations a second, well above the range of human hearing) at the rate of about twenty-five a second and increase them to about fifty a second when approaching some impediment. In short, the bat has a supersonic detection device, very much like radar. And it is a fascinating illustration of the manner of progression and of the interrelation of knowledge that this possibility did not occur to investigators in biology until it had been developed in the seemingly unrelated field of electronics.

Among wild animals, elephants and monkeys seem, after wolves, to be the subjects of most fanciful speculation. The elephant is particularly famed for his memory. The classic form of the myth is that some playful yokel, visiting a circus, gives an elephant a chew of tobacco instead of a peanut or a cake. Years later, in another town, the aggrieved and

mnemonic pachyderm spies the wag who, amid a plethora of whimsies, has forgotten this particular jest, and, rending all restraining chains and cables, bears down upon him, dashes out his brains with one blow of its trunk, and resumes its place, avenged, in the grand parade.

To point out that no such incident has ever been recorded with sufficient specific evidence to make it credible would seem to the general populace a pretty feeble retort. Perhaps it would carry more weight to say that Frank Buck doesn't believe that an elephant has a phenomenal memory.¹

Equally baseless is the statement one frequently hears that the Indian elephant is docile but the African elephant untameable. And here there is definite evidence: the Romans and Carthaginians tamed African elephants in great numbers; Carl Hagenbeck, who ought to know, declares both species to be equally tractable; and Jumbo, the most famous of all tame elephants, was an African elephant.

Monkeys are not so fruitful a source of vulgar errors as they once were. Zoological gardens have made them familiar spectacles, and Darwin changed the general amusement at their resemblance to human beings into something akin to uneasiness. As has been stated, vague stories still circulate, usually at fourth and fifth hand, of their social organization and family affection. But the most gullible reader would hesitate today to accept Pliny's account of two monkeys playing chess and would firmly reject Ogilby's assurance that baboons smoke and gamble, spending what they win 'in public houses.' Lord Monboddo asserted that orang-outangs built houses and kept human beings as slaves, that they might have the more leisure to play upon the flute; but the eighteenth century regarded Monboddo as an 'enthusiast.' The nineteenth, however, was

¹ Frank Buck: *Animals Are Like That!* (London: Robert Hale; 1941).

willing to accept Stanley's report that chimpanzees when travelling at night carried torches.¹

Monkey stories have obviously deteriorated. We have nothing today to match such golden tales. The commonest current errors concerning the primates are that they pick lice from each other and that the gorilla is the most ferocious of creatures.

Although monkeys seem to be picking lice from each other, they are actually engaged in 'grooming,' a far more curious performance than mere delousing. If in this strange process of combing and scratching each other they come across a louse, they may very well kill and eat it; but this does not happen very often. 'Vermin are rarely found on monkeys and apes in captivity.'² It is a humbling thought, but monkeys at the zoo are more likely to acquire lice from the visitors than the visitors are from the monkeys.

The other current error about the primates, that the gorilla is an exceptionally ferocious beast, is hardly proof of popular perversity. Very few people have ever seen a gorilla and almost everyone has seen cartoons, movie posters, and circus handbills in which a gorilla is depicted as a foaming monster, usually with a limp virgin in one hand and a bloody dagger in the other. Sometimes, armed with a knout, he is pictured trampling on the bodies of women and children.

A psychologist would most likely find something interesting in the fact that we have chosen the animal nearest resembling man as the archetype of brutality, but a

¹ John Ogilby: *America* (London: Printed for the Author; 1671), p. 515.

For Monboddo, see C. B. Tinker: *Nature's Simple Plan* (Princeton: Princeton University Press; 1922), p. 18. Henry M. Stanley: *In Darkest Africa* (New York: Charles Scribner's Sons; 1890), vol. 1, p. 449.

² For 'grooming,' see S. Zuckerman: *The Social Life of Monkeys and Apes* (London: Kegan Paul).

For monkeys' freedom from vermin, see S. Zuckerman: *Functional Affinities of Man, Monkeys and Apes* (London: Kegan Paul, Trench, Trübner & Co.; 1933), p. 86.

zoologist would be more concerned with the misrepresentation involved. The gorilla is indeed a huge beast, infinitely stronger than any man. He often weighs five hundred pounds and has a chest girth of fifty-five inches and an arm spread of eight feet. There is little doubt that he could splinter a Garand rifle like a matchstick and kill a man with a sideswipe of his fist.

But, despite these potentialities, he asks for nothing better than to be left in peace. In his natural habitat he is a strict family man, a vegetarian, and a pacifist within reasonable limits. He never fights unless provoked, and even when attacked he tries to get away, and if he can't get away he tries to frighten his attacker into running away. He is not a friendly creature and—like his puny caricature, the male human—he is inclined to become even less friendly as he gets older and wiser. But he does not go around bullying people. Any man who has ever been attacked by a gorilla has gone to an awful lot of trouble to get attacked. When the gorilla is captured as an infant, he is pathetic and appealing in his helplessness, but when he grows up he becomes independent and is far too strong to be patronized or shoved around. So he is put behind bars, and he doesn't like it. Human beings are sometimes put behind bars, and many of them respond in much the way the gorilla does: They mope and are surly; they don't like their guards, and they show no great fondness for people who come to gape at them.

This glorification of brute strength—for exaggerated fears are often a form of glorification—is a very recent trend in folk zoology. Perhaps it reflects the growing worship of naked force. For each age tends to support its metaphysics with a fictional zoology. Those who believed that the heavens declared the glory of the Lord saw no reason why sublunary creatures should be exempt. Believers in

Providence found proof of it in 'instincts.' The eighteenth century, exalting order and reason, found Nature orderly and reasonable. The nineteenth century preferred to contemplate the 'law of the jungle' and 'the survival of the fittest.'

A curious illustration of this tendency is found in the modern myth that lemmings (small rodents inhabiting the central mountain chain of Norway and Sweden) 'descend into the lower levels in countless multitudes and proceed in a straight line until they reach the sea, into which they plunge and are drowned.' The explanation offered is that their line of march 'is a survival from the old times when there was dry land over the Baltic and North seas,' times when a tyrannical 'migratory instinct was implanted in them. This instinct was presumably beneficent for ages but is now fatal.'¹

The actual lemming does no such thing.² The march to the sea is merely a crowding into the coastal plains of excess numbers that are periodically bred in the hills. It is an irregular movement of individuals and often takes years. The creatures are able to swim small streams, and it is possible that some reach the ocean, swim out beyond their power to return, and drown. But the grim phalanx, the death march, the fatal instinct, and the cosmic irony of it all are figments of modern pessimism, looking for a 'lost generation' in nature, seeking confirmation of 'the death instinct.'

It is a learned rather than a vulgar error. The common man has probably never heard of it, and it wouldn't suit his outlook on life if he did. It appears chiefly in the sophisti-

¹ The quotation is from *The Encyclopædia Britannica*, 14th edition (1943 revision), vol. 13, p. 905. The article is merely a condensation of that appearing in the 11th edition.

² For the facts on lemmings, see Charles Elton: *Voles, Mice and Lemmings* (Oxford: The Clarendon Press; 1942), pp. 213-16.

cated *New Yorker*, which seems fascinated by it as a sort of symbol of life.¹

Old Topsell knew his business: 'Heavenly meditations upon earthly creatures' is a successful formula. In the quaint ways of the furred folk the *Reader's Digest* sees the plump hand of Providence. The *Saturday Evening Post* resounds with the wholesome competition of fang and claw. While through the pages of the *New Yorker*, rustling and ominous, the instinct-driven lemmings patter to their doom.

¹ For their death march through 'The Talk of the Town,' see the *New Yorker*, May 27, 1944, pp. 20-21; June 3, 1944, p. 17; August 26, 1944, p. 13.

Lemmings have been known for more than four hundred years. For centuries they were used to support Special Creation, it being believed that they 'were rained down from heaven.'

Masefield in 'The Lemmings' says the fatal urge seizes them 'once in a hundred years.' He sees it as a symbol of the manner in which we, too, 'press Westward, in search, to death, to nothingness.'

THE LOWER ORDERS MUTE

SNAKES have always exercised a powerful fascination over men's imaginations. In antiquity they were often regarded as divine agents, usually of evil or of retribution. By the end of the Middle Ages their divinity had largely been forgotten, but it was 'known' that they sucked cows at night ('most manifest,' says Topsell, 'to them that will observe the same'), had the power to join themselves together after being cut asunder, swallowed their young when danger threatened and disgorged them at the all-clear, and carried a sting in their tails.

To these old beliefs our more enlightened age has added a few more. Snakes are generally credited with a hypnotic stare that 'paralyzes' their intended victims, and they themselves, particularly cobras, can be 'charmed' by music. Next to a musical instrument the best defence against a snake is a horsehair rope, for once a snake is encircled with a horsehair rope he is powerless; he cannot crawl over it. Though a synonym for treachery, snakes are thought to be not without their own ethical codes. The rattlesnake chivalrously warns his enemy before he strikes. Those that live with prairie dogs courteously refrain from eating their hosts. Members of many species will travel immense distances to avenge a murdered mate, and many, when about to be captured, will bite themselves with their own poisoned fangs, preferring death to dishonour.

None of these beliefs, either ancient or modern, has much foundation in fact. The milk snake has acquired a name from Topsell's belief, but that he merited it was 'most

manifest' to Topsell alone. A snake's lack of mobile lips and his inability to create the necessary suction would make it impossible for him to milk a cow even if one could be found patient enough to endure his small sharp teeth. The glass snake is, properly, a legless lizard, and, like all lizards, has the power to drop off part of his tail; but no one has ever seen the pieces join together again. Some species of fish do carry their young in their gullets, but the hoop snake—for all the common belief to the contrary—does not. Nor does he take his tail in his mouth and roll like a hoop.¹

Those who believe that snakes sting are divided into two groups: those who believe that the flickering tongue does the stinging, and those who believe there is a posterior stinger like a bee's. Among the first group is Shakespeare, who refers to the 'stinging' of the serpent a dozen times, twice specifically assigning the sting to the forked tongue. Milton upheld the other end, insisting that the posterior location of the sting was a definite mark of identification. Chaucer and the Bible agree with him. So do thousands of people now living. An inquiry conducted in a class of students in an American state university in 1927 revealed that more than one half the class believed that snakes sting. The believers were about equally divided between front- and rear-enders.²

That snakes paralyze their intended victims with a hypnotic stare is even more firmly rooted in popular credence, yet nothing to support it has ever been observed

¹ For the milk snake, see Percy A. Morris: *they hop and crawl* (Lancaster, Pa.: The Jaques Cattell Press; 1944), pp. 2-3. For the glass snake, see the same publication, pp. 145-46. And for the hoop snake, see pp. 7, 31.

² Shakespeare: *The Merchant of Venice*, IV, i, 68; *Richard II*, III, ii, 131; *A Midsummer Night's Dream*, III, ii, 72; *Macbeth*, III, iv, 31; *Antony and Cleopatra*, V, ii, 245, 307; *Henry VI* (2), III, i, 228, 343, and ii, 325; *Henry VI* (3), I, iv, 112. Milton, *Samson Agonistes*, 997-98. Chaucer, Prologue of *The Pardoner's Tale*, line 27. Revelation, ix, 10. The inquiry was conducted by the author at Miami University, Oxford, Ohio.

in zoos where certain large snakes have to be fed live prey. The poor patient meal often has to wait around several days before the lordly serpent will deign to swallow it, and during that period the eater and the to-be-eaten usually seem completely unaware of each other's existence.¹

Some raconteurs ascribe the same baleful glance to the praying mantis, which Fabre avers adds a further touch of horror to its performance by 'pretending to be a ghost.'²

No popular representation of India would be accepted as authentic unless it contained a snake charmer fascinating his swaying cobras with the music of his pipe. Yet the evidence is against it. Ditmars, after an interesting investigation, came to the conclusion that music *as music* does not interest snakes at all, but that they seem to respond, as dogs do, with acute discomfort to certain pitches. One school of interpretation holds that the cobras are really hypnotized by the swaying of the charmer's body.

Most animals, as a matter of fact, seem to dislike music. Tommy Dorsey and his band contributed to the advancement of science in 1940 by giving a special concert for the monkeys in the Philadelphia Zoo, and trained observers noted that the response was definitely negative. Cincinnati holds its summer opera in the zoo, and the trills of the coloraturas seem to move the seals and sea lions, whose tank is near the auditorium, to unusually vigorous yawpings, though whether these are intended to convey applause or protest has never been determined.³

¹ P. Chalmers Mitchell: *The Childhood of Animals* (New York: Frederick A. Stokes Company; n.d. [c. 1912]). And see E. G. Boulenger: *Searchlight on Animals* (London: Robert Hale; 1936), p. 52.

² J. H. Fabre: *Social Life in the Insect World* (London: T. Fisher Unwin; 1923), pp. 75-77.

³ See Raymond L. Ditmars: *Reptiles of the World* (London: Sir Isaac Pitman and Sons). And see Alan Brown: 'Animals Don't Like Music,' in *The Etude*, February 1943, pp. 79, 126, 128. Tommy Dorsey's experiment is described in this article. And see George J. Romanes: *Animal Intelligence* (London: K. Paul, Trench & Co.; 2nd ed., 1882), p. 265.

Snakes' ethics bear scrutiny no better than their æsthetics. The chivalry of the rattlesnake's rattle is a lay conception. Zoologists are not at all convinced that it is intended as a warning. Darwin was inclined to regard it as an organ of sexual attraction. Perhaps excitement of any kind causes the rattle to shake; and, of course, once another animal associates that sound with a rattlesnake, there is nothing to stop him from taking it as a warning. But that's another thing.

Rattlesnakes do sometimes live in the burrows of prairie dogs, but this association, like all other forms of symbiosis, is hardly the contractual agreement that popular fancy likes to think it is. The snake is an intruder and, one assumes, an unwelcome one, but there is nothing the wretched rodent can do about it but keep out of the snake's way. If he is not bitten, he owes it to his own agility, not to his tenant's gratitude.¹

Turtles, chameleons, and toads are other reptiles that figure in folklore. Forty years ago every barefoot, barefaced boy in America was willing to swear that a decapitated turtle would not die until sundown. In actuality, a turtle, like any other vertebrate, dies the moment his spinal cord is severed. Reflex twitches may have been mistaken for continued life, and these may perhaps have abated more rapidly in the cool of the evening.

The chameleon has become a metaphor for changing colour to suit the surroundings, and the actual chameleon often comes in for a lot of abuse for failing to live up to his myth. Men at fairs and such places who sell these little creatures encourage the delusion by sometimes arranging them as a part of corsages and implying that they will match any costume. They gain time enough to get the purchased price securely into their cash registers by saying that the transformation will take a little while, and they expect

¹ Morris: *they hop and crawl*, pp. 108-9.

indignant protests from the disappointed customers as a part of their business.

All that can be said is that chameleons do turn colour when angry or afraid (as, to a lesser extent, human beings do) or under the influence of sudden changes in light or temperature, and such changes may approximate to the background, but only within narrow limits.¹

The harmless, beneficent little toad has long been an object of fear and superstition. In earlier days it was believed that he concealed a jewel in his head and thus hopped around illustrating the moral doctrine that virtue is often concealed beneath an uncouth exterior. In a modern moral bestiary he would illustrate the sadder wisdom that there is no crime like ugliness.

Country boys generally believe that touching a toad causes warts. And because the parotid gland of the toad secretes a substance highly irritating to the skin, and because warts are at times a reaction to some kind of skin irritation, there may be something to it. But the chances are that it is merely a false deduction from the warty appearance of the toad's own skin.

The toad's clammy, corpselike feeling, with its suggestion that he is already dead and hence not subject to mortality, may be the basis for the many stories that one hears of a toad's being liberated from the centre of a block of stone or concrete in which he had obviously lived for years, or even centuries, without nourishment or air. In the classic version—one often sees it in the paper, date-lined from some place inaccessible to inquiry—the creature is at first seemingly lifeless. But he revives in the open air, and, to the astonishment of the excavator, hops away apparently none the worse for his strange experience. Unfortunately for the veracity of the anecdotes, a toad must have air to survive;

¹ Morris: *they hop and crawl*, pp. 120–121.

and, even with all the air, food, and water that he can desire, he will not survive many years.

Of creatures that live in the sea, the whale, the shark, and the octopus appear most frequently in vulgar lore.

Although all that comes out of a whale's blowhole is his breath, he is commonly represented as spouting a jet of water into the air. If the artist is unusually naïve or unusually playful he sometimes puts a few small fish on top of the column, though this may be merely a fanciful way of indicating that the spout is composed of water, as Sir John Harrington depicted fish swimming in the bowl of his newly invented water closet, not because he wanted fish there but because he wanted the reader to be sure there was water.

The assertion that one often hears from village atheists that whales have very small throats is an amusing example of a vulgar error invented to refute a vulgar error based on a vulgar error. The 'great fish' which the Bible says God prepared to swallow Jonah was commonly taken to have been a whale, though the Bible does not commit any such error in nomenclature. In the rational attack on the Bible, this poor creature (whatever its species) became the object of particular derision from wiseacres who plainly did not know a minnow from a midrash, and one of the most triumphant—and common—refutations of orthodoxy was to insist that a whale could not have swallowed Jonah because whales have too narrow throats to pass a man. Even the devout were bludgeoned into abject acquiescence: *Helps to the Study of the Bible* (Oxford, 1891) confessed meekly that 'a whale has too contracted a throat to swallow a man.' But the retreat was too hasty. A little investigation would have enabled the true believers to hold out: many whales have throats quite large enough to swallow a man, whether he be prophet, priest, or profane.

Biologically, the shark is an interesting creature. The

anatomist, the paleontologist, the zoologist, and even the dietitian are vastly interested in him, but the populace is concerned with only one thing—that sharks eat men. Nothing else is known or need be known. It is not that they nibble occasional swimmers. The man-eating shark of popular fancy subsists wholly upon human beings or, at the best, partakes of other food merely to sustain himself in his hideous quest. That sharks are many in the ocean and men are few serves only to madden him. When anyone dies on a ship the sharks ‘know’ it and follow the vessel for days with greedy patience. The shark is so absolutely the killer of the deep that anyone who questions his addiction to human flesh is regarded as demented.

Yet it has been questioned frequently. The controversy is entirely too heated and the evidence too fragmentary and inconclusive for judgment either way to be anything but rash, but it will probably come as a surprise to many to learn that actual, authentic cases of men being attacked by sharks are very rare. The Navy’s Bureau of Aeronautics, in a pamphlet issued to its fliers, states that ‘there is practically no danger that an unwounded man floating in a life jacket will be attacked by a shark.’¹ Of the several hundred varieties of sharks only half a dozen have the denture necessary for man-eating, and of these not all have the disposition. Of those that have, few get the opportunity, and of those, few make the most of it.

But the chief position of horror among the denizens of the deep is reserved in folklore for the octopus—thanks largely to Victor Hugo and the Sunday supplements.

¹ See John Maloney: ‘The Shark is a Sissy,’ in *Collier’s*, October 7, 1944, pp. 27, 63. The Navy Bulletin, ‘Shark Sense,’ was issued in March 1944 by the Aviation Training Division. And see Captain William E. (‘Sharky Bill’) Young: *Shark! Shark!* (New York: Gotham House; 1933). Captain Young, for thirty years a shark hunter, confessed that he had never known of a shark’s attacking a living man, though he thought it might happen.

The animal is, indeed, fearful to behold. Its boneless body, rhythmically inflating and deflating, the ceaseless waving of its fleshy tentacles with their sucking discs, and the cold stare of its lidless eyes are enough to chill the warmest courage. But as far as human beings are concerned, it is one of the most harmless of living things. E. G. Boulenger, for many years Director of the aquarium at the London Zoo, says that the danger from an octopus is 'more psychic than physical,' and adds that the belief that its grasp is unbreakable is nonsense. 'A firm grip need only be asserted on the creature's head and body,' he adds, 'to induce even a large specimen to at once relax its hold.' Another zoologist who has worked with these cephalopods is even more emphatic: a farmer in a cornfield is in more danger of being attacked by a pumpkin, he maintains, than a swimmer is of being attacked by an octopus.¹

Insects, the most numerous of visible living things, were until very recently lumped together as 'ephemera' and regarded as beneath a serious man's notice. Within the past fifty or sixty years scientists have changed all that, but it is doubtful if the average man, even yet, could name two dozen of the tens of thousands of species of insects that fly and crawl about and over him. His general impression of them is vague and unpleasant; they bite and buzz, get into food, blunder around lampshades, and eat clothing, fruit trees, and the foundations of buildings. They are æsthetically repulsive, and often frightening; the very word 'bug'—common generic term for them—is related to 'bogey,' 'bugaboo,' and 'bugbear.'

Very few of them have had even a moral value. The moth singed in the flame and the butterfly broken by spring

¹ Boulenger: *Searchlight on Animals*, p. 171; and *The Aquarium Book* (London: Duckworth; 1925).

The other zoologist was Professor Stephen Riggs Williams, of Miami University, Oxford, Ohio, who told the author what is here related.

rains have served as warnings to the young and gay—or, at least, as satisfactions to the old and envious. But except for such trifling uses no good has been found in any of them except the bee and the ant, and here, as though to make up for the lack elsewhere, more has been found than ever existed.

Bees have always been conspicuous in folklore. Their colonies were regarded as miniature human societies, and their devotion to their 'king' (for the queen was assumed to be a male) served as a rebuke to restless subjects.

In primitive times the bee was a widespread religious symbol, probably of immortality. It was connected with Mithraism, with the worship of Dionysus, and with the cult of Apis. Honey and wax were thought to have magic properties and were used in sacrifices; and Christianity may have absorbed some of this feeling along with other elements of these cults, since honey was formerly given to babies during baptism and 'the tapers of our churches were supposed to be made of pure bees' wax.'¹

Though the bee is no longer worshipped, the ascription of marvellous properties to honey is still almost universal. It is the ingredient of a score of patent medicines. It brings beauty to those bold enough to smear their faces with it. And tobacco that has been soaked in it is advertised as 'less irritating' to the throat.

Bees themselves have not created so many myths as their honey has. Their 'homing' instincts are generally misunderstood and exaggerated, and the organization of the hive is commonly misrepresented through a desire to force an analogy with human society. Most people have 'heard' that the tinkling of a pan (preferably a brass pan) will cause a swarm to settle, though beemen say it won't. And boys in

¹ William Morton Wheeler: *Social Life Among the Insects* (London: Constable and Company).

almost all lands comfort themselves with the delusion that the bee that stung them paid for its act with its life.

A strange old belief was that honey bees were generated spontaneously in the decomposing carcase of an ox or a bull. Other animals sometimes sufficed; it was in a dead lion that Samson found the honeycomb and his lethal riddle, but generally it was an ox or a bull. Galen believed that bees were so generated, and Vergil in the fourth *Georgic* gave precise directions for preparing the ox's body. It was not until the eighteenth century that Réaumur showed that what had been regarded as bees must have been those flies that breed in carrion and resemble bees.

That it should have taken so long to perceive so obvious a fact is a striking illustration of the degree to which authority can triumph over observation. For three thousand years the belief was universal. No one seemed to have noticed, or at least no one seemed to have cared, that the 'bees' that were 'generated' in rotting flesh never produced honey. In Christendom, of course, the question was put beyond observation or experiment by the fact that the Bible said they *did* produce honey. And who, intelligent enough to make an investigation, would have been stupid enough to quarrel with the Inquisition over a handful of flies?

The ant, as Clarence Day has said, is a monkey's idea of industriousness. The furious aimlessness of an ant's activities, his busy and bossy inefficiency, is so strikingly similar to what frequently passes for 'administrative talent' that we have naturally accepted him as the type of admirable energy.

The true ant, however, bears very little resemblance to the ant of popular conception, who owes his reputation for wisdom and provident toil chiefly to King Solomon's ignorance. Nothing, really, would be more likely to com-

plete a sluggard's demoralization than for him to go to the ant and observe his ways. The small accomplishment for the great expenditure of energy that he would witness would surely reconcile him to his own indolence. When he observed how infatuated many species of ants are with the parasites that prey upon them, he would most likely choose the career of a parasite. The only thing he would really admire would be their thieving or their periodic orgies, the most wasteful saturnalia in nature. No, no, the sluggard, of all people, must not go to the ant!

Nothing is better 'known' about the ant than that he labours all summer to lay up provisions for the winter. But, alas for morality, he doesn't. There are some harvester ants, but they are not common. Most live on food that could not be stored even if they needed it. But they do not need it, for they are generally torpid through the winter. The honey ants of Texas store food by the strange method of hanging certain members of their colony from the ceiling of their nests, heads down, and stuffing them with honey until they are swollen like balloons. Then, when food is no longer obtainable, they 'milk' these living jugs of their contents. *That* would please the sluggard.

Corollary to the ant, and dragged along behind him from Æsop to Disney, is the grasshopper, whose improvidence serves as a foil to the ant's industry, thrift, and foresight. In reality, however, the situation is reversed. At no time does the grasshopper beg from the ant, says Fabre; it is the roguish ant who steals from the industrious grasshopper. In hot weather the cicada bores strenuously for sap with his rostrum, while the greedy ants crawl between his legs and steal the fruits of his labour. 'The ant,' he concludes, 'is the hardened beggar; the industrious worker is the grasshopper.'¹

¹ Fabre: *Social Life in the Insect World*, pp. 6-8. And see F. Alverdes: *Social Life in the Animal World* (London: Kegan Paul).

WOLF! WOLF!

An interesting footnote to folk zoology is supplied by stories of children being reared by animals, stories that have been repeated among all peoples of all periods. And it is not without significance that this myth has reappeared in our own time and has been given wider credence, under more dignified auspices, than ever before in its long history.

Many legendary heroes were reared by animals. Zeus and Tarzan both had the benefit of such an association, and history is spotted with lesser figures who derive their whole importance from their feral foster mothers. Ireland had a sheep-boy, and at Salzburg there was a swine-girl who ate acorns and sat cross-legged in a sty to the admiration of all beholders. In 1403 a fish-woman with 'sea-mosse that díd stick about her' was washed through the dykes at Edam and lived for the next seventeen years in Haarlem, where she 'learned to spinne and perform other pettie offices of women' though she was never able to master Dutch. She adored the cross and so impressed the local clergy that more than forty of them are said to have testified to her authenticity.¹

There seems to be something about these unhappy beings, in fact, that leads divines to vouch for them. Thus it is on

¹ The sheep-boy and the swine-girl are most easily accessible in Robert M. Zingg: *Wolf-Children and Feral Man* (New York: Harper & Brothers; 1942), pp. 178, 202.

For the fish-woman, see John Swan: *Speculum Mundi* (Cambridge: Printed by Roger Daniel, Printer to the University of Cambridge; second edition; 1643), pp. 368-69.

the authority of Archbishop Matheson of Winnipeg that Ernest Thompson Seton tells the 'true story' of little Harry Service's being adopted by a badger. In this instance, it is pleasant to relate, there was a reciprocation of unnatural affection and the badger herself was adopted by Harry's family, though it proved a trial, for an unfortunate rivalry for the boy's love developed between his real and his foster mothers.¹

A more recent adoptee was Lukas, the baboon-boy of South Africa, sponsored in the *American Journal of Psychology* (January 1940) by Dr. Foley and in the *American Weekly* (May 18, 1941) by Professor R. M. Zingg, of the University of Denver, whose unselfish devotion to his protégé threatened, for a time, to wrest from Lord Monboddó the honour of being 'the baboon's gen'rous friend.' Unlike the fish-girl, Lukas could speak Dutch, or at least Afrikaans, and in the guttural accents of that harsh tongue furnished eager scientists with a detailed account of his simian sojourn. What's more, if attention seemed to flag, he would exhibit the scar where an ostrich had kicked him or eat a cactus. He could eat a tremendous number of cacti—eighty-nine at a sitting, the excited savants said—an ability that was regarded as absolute corroboration of his story. In 1937 his supremacy—and his cash value as a unique exhibit—was challenged by Ndola, a rival baboon-boy; but Ndola was exposed, in the *American Journal of Psychology*, as merely 'a case of neglected paralysis provoking the quadrupedal posture,' and Lukas had the learned journals to himself again.

But not for long. Seven months after Ndola's exposure Lukas himself 'fell with hideous ruin and combustion down.' It came out that he had not lived with baboons at all—had, in fact, been doing time in the Burghersdorp jail at the

¹ Ernest Thompson Seton: *Famous Animal Stories* (London: John Lane; 1933).

moment he was said to have been discovered among his blue-bottomed siblings.

The trouble was that *his* alleged discoverer was a policeman and hence subject to discipline for perjury. Under questioning by the Commissioner of Police the story turned out to be hearsay from a dead man, and upon the Commissioner's businesslike report the whole sorry train of professors began to turn and belabour each other. Not, of course, without academic dignity. Dr. Foley's authentication of Lukas, said Professor Zingg, had been 'accurate for the time it was written.' Its 'precipitous' publication had been due to the 'generous policy' of Dr. Raymond A. Dart, of Johannesburg, who had nobly shared his findings with other seekers at all stages of the investigation. And this particular stage happened to be the 'premature' stage.

In the general excitement attendant upon the discovery of the imposture, Professor Zingg obviously was unable to inform all his correspondents, for, almost a year after this stately recantation, the story was published again, as on his authority, in the *American Weekly*. And in 1944, though by then well enough established to need no sponsor, Lukas was again cavorting through the pages of that publication.

The true Lukas, by the way, but he alone, was placed in an institution for the feeble-minded.¹

Lukas's withdrawal, however, to 'the vast edges drear and naked shingles' of the journalistic world did not leave the somewhat more literate papers wholly barren. There was almost always some animal-adopted child to be presented

¹ For the rise of Lukas, see 'The "Baboon Boy" of South Africa,' by John P. Foley, Jr., in the *American Journal of Psychology*, January 1940, pp. 128-33, and the discussion in the columns of *Science*, March 22, 1940, pp. 291-92.

For his fall, see 'More about the "Baboon Boy" of South Africa,' by Professor R. M. Zingg, *American Journal of Psychology*, July 1940, pp. 455-62.

For his post-mortem vitality in the popular press, see the *American Weekly*, May 18, 1941, pp. 12-13, 17, and the same publication for December 10, 1944, p. 16.

and discussed in their columns. In 1926 a boy had been rescued from wolves near Miawanna, seventy-five miles from Allahabad. He barked at night, ate grass, and propelled himself along the ground in the manner of a dog with worms, and was said 'to display certain instincts even lower than those of his alleged foster parents'—though just what these were was never made clear, delicacy, no doubt, forbidding.

The *New York Times*, in more than a column devoted to the problems that this boy's rescue had raised, was of the opinion that he was authentic. 'Some of the best known medical men in London' had been sceptical, but an equal number of 'Old Indian Army Officers' had silenced them by asserting that wolf-children were quite common in India. Kipling, as the creator of 'wolf-suckled, snake-taught, elephant-advised Mowgli,' was naturally sought out for an opinion. He emphatically supported the Old Army Officers, though he doubted that the boy went, as described, on his hands and knees. He thought it more likely that he went on 'knees and elbows.'

Concern was expressed lest wolf-mothers might neglect the religious training of such children as they might adopt, but it was allayed by the Reverend M. McCleah, then vicar of St. John's at Hallington, in Sussex, who in 1897 had conducted the funeral services for a wolf-boy who had been captured at Sikandra thirty years before. Certain elements in this lad's deportment had indeed for a long time suggested that wolf-parents were not desirable from a moral standpoint. But Mr. McCleah was able to assure the troubled that the boy's basic moral fibre had not been damaged, since, just before he died, he had 'closed his eyes and pointed towards the skies' in a manner that made full amends for his previous impiety.

Among the letters to the editor which the story of the Miawanna boy evoked were protests against the cruelty of

taking these children from their foster mothers. But, so far as is known, nothing was done. Action may well have been frustrated by a jurisdictional dispute between the Society for the Prevention of Cruelty to Children and the Society for the Prevention of Cruelty to Animals.¹

But the story of animal adoptions that reduces all the others to insignificance is that of the 'wolf-reared waifs of Midnapore,' which made its first full-dress appearance in *Harper's Magazine* in January 1941. This was not its first time in print, however. It had been run in the *Westminster Gazette* and had been reprinted in the *New York Times* as early as 1926. It had played peek-a-bboo in various learned publications for a dozen years, and in 1939 it had filled a spread in the *American Weekly*, illustrated with those vivid sketches by which that lively journal seeks to assist such of its subscribers as find reading difficult. But the sponsorship of *Harper's* and the renown of its new narrator, Dr. Arnold Gesell, Director of Yale's Clinic of Child Development, raised it to a new dignity, while the singular style in which it was presented gave it an added grace and freshness.

Dr. Gesell's narrative can be briefly summarized. In the autumn of 1912, he says, an Indian she-wolf, 'her teats gorged; her eyes . . . preternaturally mild' and her whole being 'warmed by the chemistry of maternal hormones,' adopted a Hindu baby girl. Nourished by 'mammalian milk' (which Dr. Gesell asserts is 'chemically very like' other milk), the child made 'a remarkably effective adaptation to wolf mores.' It was not easy: 'Furniture there was none'; 'Books rugs, dishes' and 'true table manners' were 'conspicuously lacking.'

¹ For the Miawanna boy, see the *New York Times*, April 6, p. 4; April 27, p. 11; May 2, p. 20; July 10, p. 10; July 17, p. 9—all 1927. And see the *Literary Digest*, October 8, 1927, pp. 54-56.

The curt, compendious characterization of moody moppet Mowgli is, needless to say, from the pages of *Time*—November 1, 1926, p. 25, n.

But the little girl overcame all obstacles and made 'a successful adjustment to the onerous demands of the wolf den.' She got on without furniture and books, slept on the floor, ate directly with her mouth, politely overlooked the lack of good manners, and 'rubbed her haunches over the ground for cleanliness.' She developed 'a deep and mysterious sense of community with the pack'—a 'palship,' Dr. Gesell would call it—scrambled after them on their forays, became adept at shooing buzzards off a dead hog, and added her treble wail to that 'weird nocturne' which every night, at ten, one, and three, the wolves sent up to the shivering stars.

Her physical adaptation to what Dr. Gesell calls 'wolverine' culture was in some ways more remarkable still. Her spine modified to suit 'bi-patellar locomotion,' a glow 'emanated' from her eyes at night, her canine teeth grew long and pointed, and she ceased to perspire, tending rather 'to pant and to extrude her tongue in the sun.'¹

In 1919, 'of all unpredictable wonders,' the mother wolf adopted another child, also a girl. In 1920 the wolf was killed and the children, now doubly orphaned, were placed in the care of the Reverend J. A. L. Singh, of Midnapore, who discreetly kept their history a secret for six years lest it should 'prejudice their chances of marriage.' One would have thought that the younger girl's death and the older

¹ For the date of the adoption, the 'gorged teats,' the 'mammalian milk,' the lack of furniture, rugs, dishes, etc., see Arnold Gesell: 'The Biography of a Wolf Child,' in *Harper's Magazine*, January 1941, pp. 184, 185, 186, 189; and Arnold Gesell: *Wolf Child and Human Child* (London: Methuen and Company).

For the 'successful adjustment,' the rubbing of haunches, the 'sense of community,' the 'palship,' the forays, the buzzards, and the 'weird nocturne,' see *Harper's*, January 1941, pp. 186, 188, and *Wolf Child and Human Child*.

For her physical adaptation to 'wolverine' culture, see *Harper's*, January 1941, pp. 186, 189, and *Wolf Child and Human Child*.

That she 'ceased to perspire' is probably based on the assumption that dogs do not sweat. But J. G. Speed of Edinburgh has shown that they do (see *Science Digest*, March 1942)—not much, but with what sweat glands they have.

girl's strange habits would, in themselves, have been sufficient to discourage the most ardent suitor, but the good man's solicitude is none the less touching.

The death of the younger child occurred in 1921, but the older, who had been named Kamala, lived until 1929, slowly readapting herself to human ways. She continued the 'traditional wolf howl' at ten, one, and three, but a human note was observed in 1922 when she addressed Mrs. Singh as 'Ma.' In time she 'toileted in the bathroom,' to use Dr. Gesell's chaste phrase, though this must have been one of her latest accomplishments, for in 1926 the Reverend Mr. Singh, in a letter to Paul C. Squires, stated that she didn't, and from the general gloom of his statement we are led to suspect that she continued her strange and strenuous abstentions. By 1927 she had 'so far transcended wolf ways' as to be regular and devout in church attendance, in which she showed marked superiority to the Sikandra boy, who had interrupted divine service by shouting 'Dham, dham!'—a proceeding which Dr. Gesell says indicated 'a low idiot plateau of mentality.'

By 1927 also 'her behaviour had become conventional' and she talked 'with the full sense of the words used.' But this advantage over her biographers was not long maintained, for she was taken ill 'and gave up the ghost on the 14th morning at 4 a.m. in the month of November, 1929.'¹

For his detailed account of life in the den, Dr. Gesell confessed that he drew heavily upon 'imagination and . . . conjectures.' For his knowledge of the later years in the orphanage he acknowledged his indebtedness to a 'diary record' kept by the Reverend Mr. Singh and entrusted by

¹ For the 'unpredictable wonder,' the second child's death, Kamala's readaptation, 'Ma,' 'toileting' in the bathroom, church attendance, and her death, see *Harper's*, January 1941, pp. 186, 191, 193, and *Wolf Child and Human Child*. The account of Kamala's death is quoted from the Reverend Mr. Singh's diary.

him for publication to Professor Zingg who, despite Lukas's defalcation, continued a friend to feral man.

While this more scholarly work was in preparation, however, Dr. Gesell soothed the impatience of the public by publishing *Wolf Child and Human Child*, a fuller account of the episode, embellished with some retouched snapshots, a pen drawing of 'the mother wolf,' and 'a quaint wood-cut' of Romulus and Remus which he was forced to use, he admits, for lack of a suitable photograph. This volume added no new information, though a discussion entitled 'Can Wolf Ways be Humanized?' was not without interest. *Time*, no shunner of issues, which had taken up the wolf-children with its customary vigour, answered definitely that they could not: 'A wolf, or even an ape,' the editors stoutly maintained, 'reared in the Rev. Singh's orphanage would not attain a human personality.'¹

The facts upon which this ringing enunciation was based were drawn (like Dr. Gesell's narrative, and the *Scientific American's*, *Coronet's*, the *American Weekly's*, and the *Saturday Home Magazine's*—for the story had wide circulation) from the Reverend Mr. Singh's diary and from the interpretation put upon it, in various learned articles, by Professor Zingg. Dr. Gesell was sure that Professor Zingg had 'carefully checked the essential authenticity' of the whole business; but 'carefully checked,' like 'wolverine,' must have had here some meaning not commonly attributed to it, for Professor Zingg had said, only a few months before, that he had 'unfortunately been unable to get in touch with scientists in India to check and recheck the cases.' He had, however, he hastened to add, talked with at least two people who

¹ For 'imagination and . . . conjectures' see *Harper's*, January 1941, p. 183, and *Wolf Child and Human Child*.

For 'The Mother Wolf,' see plate 3, *Wolf Child and Human Child*.
Time, March 3, 1941, p. 58.

had travelled in India, one of whom referred him to the *Illustrated Weekly of India* for an account of another wolf-child 'exhibited at the Gwalior Baby Week'; and later, when under fire, he insisted that he had spent three years 'checking through voluminous correspondence with numerous persons.' This activity apparently left no time for consulting an atlas, for he seems to have been under the impression that Midnapore was among 'the tiger-infested Jungles of north-west India'; whereas Dr. Gesell, who it would seem doubted the 'essential authenticity' of at least *that* fact, strung along with Rand McNally and located it seventy miles southwest of Calcutta.

Before the diary could be published, however, scepticism, with 'extraordinary license,' had reared its ugly head and it was felt necessary to silence 'irresponsible' doubters once and for all. To this end the diary, when it finally appeared in 1942, was prefaced with a formidable battery of testimonials. Unfortunately for their effect upon the sceptic, however, none of them happened to be by any of that 'good number of men . . . of a sportive nature' in whose company the Reverend Mr. Singh went to preach the gospel and professed to have first seen the children living as wolves among wolves. Professor Zingg says boldly that five such persons 'are on record,' but he fails to make it clear that the record is the Reverend Mr. Singh's and no one else's, that it consists entirely of the latter's say-so. That at least one of the five could not have been included among the 'numerous persons' addicted to 'voluminous correspondence' is regrettable.

In their place, however, Professor Zingg offered five character witnesses for the Reverend Mr. Singh—three professors, a judge, and a bishop.

Of these the professors did not profess to have seen either the Reverend Mr. Singh or his wolf-children, so that the

only characters illuminated by their testimony were their own. The judge, a resident of Midnapore, testified that he believed the story and that he had actually 'spoken to several people who saw the elder of the two girls' while she was living at the orphanage. The brunt of affirmation was thus thrown upon the bishop, the Right Reverend H. Pakenham-Walsh, who definitely stated that he saw the elder of the two girls four years after her rescue. He does not claim to have been personally acquainted with the mother wolf, yet he is able to assure us that she was 'well pleased with her experiment.' From his examination of the child he concluded that wolves have 'no sense of humour' and 'no interest except in raw meat.' He was happy, though, to be able to announce that the wolf-parents had not taught their charges 'anything bad,' a fact that he felt has 'a very pertinent bearing on the consideration of what we mean by "Original Sin."'¹

Fascinating though such reflections are, however, the severe logician must dismiss them as irrelevant. Professor Zingg's correspondents, Professor Gesell's prose, the judge's affidavit, the bishop's meditations, and the attending physician's uroscopy of the dying Kamala—all have an interest, even a charm, of their own; but they add nothing whatever to prove that the children were adopted and reared by wolves.

For this our sole evidence is that 'diary of observation' which we are innocently told in a foreword 'was nearing completion' in 1933, though the last of the children had died in 1929; and this diary, for all the eager promises of 'internal evidence,' fails to carry conviction. Though it professes to be a day-by-day record of the discovery of the children among the wolves and their subsequent behaviour

¹ Bishop Pakenham-Walsh's remarkable statement is to be found in Zingg: *Wolf-Children and Feral Man*, pp. xxv-xxvii.

at the orphanage, it is actually a meagre collection of entries, few and irregular, not arranged chronologically, and interspersed with reflections concerning the 'divine' nature of the event that are, to say the least, unscientific. And the 'proof' is further vitiated by the fact that the Reverend Mr. Singh had been convinced that the children were wolf-children even before he unearthed them.

That he reared a strange child in his orphanage is as incontestable as that he was probably the worst photographer that ever lived. That he found the child in the woods in the vicinity of wolves is at least possible, though that great scientific authority, the *Illustrated Weekly of India*, says that there are no wolves in this particular region. Furthermore, there are discrepancies in his earlier and later accounts of the findings, and his failure to secure testimonials from those who he says were with him at the time, while going to such trouble to get testimonials from others, adds to the growing doubt.

Of course even if he had found the children, exactly as he said he did, living in an ant-mound from which wolves had been seen to run, it would not have been positive proof that they had been reared by those or any other wolves. They may have fled into the den in fear. Or they may even have lived there independently. It would have been a strange situation, but nowhere nearly so strange as the one alleged. That they curled up in a ball—which for some reason is thought to be irrefutable proof of their previous lupinity—merely proves that their backbones were flexible. It is not an uncommon condition in children and may be observed—as Dr. Gesell ought to know—in scores of nurseries that have known no other wolf than Red Riding Hood's.

But the most damning point of all, the thing that makes the whole story untenable, is the effort—which occupies the

major portion of every version—to show that the children must have been reared by wolves because they later *behaved* like wolves. But the wolves they behaved like were not ordinary, four-footed wolves, or even a particular species of ordinary wolves, *Canis pallipes* (for Dr. Gesell is very learned on this detail), but were genuine funny-paper wolves, *Lupus vulgus fantasticus*, running in packs, howling by the clock, and emitting a 'weird light' from their eyes.

Such is the basis for what one of the foremost publishers of the day regards as an 'absorbing and invaluable human study' and which 'testifies anew' (in the opinion of one of the highest-paid savants of Yale University) 'to the stamina of the human spirit.' Another artless pundit, crying that the story served admirably 'to introduce us to some of the basic matters with which sociology deals'—as no doubt it does—proceeded in haste to revise his textbook, building the whole fabric of his new thought upon these shifty sands. Others followed suit, until today the waifs, like God, would have to be invented if they did not exist; they serve so many purposes. Half a dozen college textbooks have been rewritten to include them as 'authenticated' facts. Two complete volumes have been written about them. And practically every leading journal and news organ has had an article on them in which the veracity of the narrative was never questioned.¹

¹ The articles and comments in the *New York Times* appeared: October 22, 1926, p. 1; October 23, p. 11; December 26, p. 4; January 30, 1927, p. 14; April 6, p. 4; April 27, p. 11; with an editorial on May 2, p. 20.

Other references and stories in the popular press, all favourable: *Time*, November 1, 1926, p. 25; March 3, 1941, pp. 58-60. *Scientific American*, March 1941, pp. 135-37. *Science News Letter*, July 13, 1940, pp. 26-29. *The Reader's Digest*, August 1940, pp. 40-42. *Saturday Home Magazine*, August 30, 1941, p. 5. *The American Weekly*, May 18, 1941, pp. 12-13, 17. *Coronet*, May 1943, pp. 141-50.

A few among the college textbooks and other learned works that have accepted the story either with enthusiasm or with very faint caution: E. D. Chapple and C. S. Coon: *Principles of Anthropology* (New York: Henry Holt and

Sometimes one wonders why any self-respecting wolf would *want* to adopt a human being.

Company; 1942), pp. 63-64. E. T. Krueger and W. C. Reckless: *Social Psychology* (New York: Longmans, Green and Co.; 1931), pp. 38-39. F. C. Dockeray: *Psychology* (New York: Prentice Hall; 1942), pp. 82-83. Kimball Young: *Sociology* (New York: American Book Company; 1942), pp. 5-8, 11.

PRECONCEPTIONS

IN the summer of 1943 absenteeism among women war workers reached such proportions that sabotage was suspected and agents of the F.B.I. were called in to investigate. Their finding, confirmed by other government and private agencies, was that women were being driven from the lathes and benches by strange sexual fears. Some feared sterility from welding or from working with ultra-violet or infra-red rays. Some feared that riveting caused cancer of the breast. A wholly new and fictitious female disorder—'riveter's ovaries'—had been invented. And scores of women engaged in filling fire-extinguishers for aeroplanes had left in panic when it was rumoured that the material they were handling, carbon tetrachloride, caused pregnancy.¹

Such terrors, particularly the last one, constitute a striking comment on the general ignorance of biology and genetics. Sex has obviously been so surrounded by mystery as to have become a fertile field for misapprehension.

That conception is possible without coition is apparently a deep and persistent fear with women, and one that has

¹ The *Chicago Sun*, September 2, p. 1; 3, p. 1, 1943. Confirmed by the American National Institute of Health (a branch of the Public Health Service) and the U.S. War Manpower Commission. Confirmed independently by Dr. Marion Janet Dakin, conducting an investigation for the Lockheed Aircraft Company at its Burbank plant. See *Time*, July 17, 1944, p. 60.

Carbon tetrachloride seems likely to become the Til Eulenspiegel of industrial folklore. 'The Mad Anæsthetist' who sprayed the women, or at least the newspapers, of Mattoon, Illinois, with a phantom flit gun during the nights of September 1944 turned out, in so far as he had any material body at all, to be a five-gallon can of this volatile fluid in the plant of the Atlas Diesel Company. See the *Chicago Sun*, September 14, 1944, p. 13.

given rise to many myths. Of these the most common is that women have conceived after bathing in tubs which had previously been used by men. One hears this story as a bit of gossip every two or three years, yet three centuries ago it was 'common in every mouth' and even then could be dated back almost five hundred years. Such is the antiquity of what is eagerly whispered as 'the latest thing.'¹

Sometimes it is an animal. Dr. Fishbein quotes an item from the *Boston Traveler* of an unfortunate girl who had hatched out an octopus egg, and another from the Okmulgee (Oklahoma) *Democrat* of a nurse who had 'died in terrible agony' when a snake that she had been nurturing in her stomach bit her. She had been put on a strict diet and the reptile had been 'driven by hunger' to eat its host. It is commonly believed, Dr. Fishbein says, that snake eggs may be ingested by drinking from a garden hose.²

The phantasy of such delusions seems pretty plain. The thought of a union with animals has always intrigued the popular mind. No theme is more common in mythology, though current sentiment prefers, as in Robinson Jeffers's *Roan Stallion*, that 'some obscure human fidelity' should exercise a discretionary control over the affair.

Even more, of course, it prefers that the whole thing be romanticized or 'kept pure.' 'Wholesome' is the customary word. James Oliver Curwood is a very wholesome writer. His most famous creation, for instance, Kazan, the mighty

¹ "'Tis a new and unseconded way in History,' says Sir Thomas Browne, to 'fornicate at a distance, and much offendeth the rules of Physick.' Sir Thomas Browne: *Works* (Edinburgh: John Grant; 1927), vol. 3, pp. 56-57. He says that the yarn of 'the woman that conceived in a bath' is 'now common in every mouth.' He traces it to Averroes (d. 1198).

² Morris Fishbein: *Shattering Health Superstitions* (New York: Horace Liveright; 1930), pp. 19-20, 92, 97.

The story of the octopus egg was widely current along the Atlantic seaboard in the summer of 1933-34.

wolf dog who went before to clear the way for Rin Tin Tin, is brought almost to the brink of neurosis by the conflict of his loves for Joan, his human mistress, and Gray Wolf, his mate. His innate nobility solves the problem and preserves his sanity—if not the reader's—by dictating that he must remain with Gray Wolf for ever after she is blinded by a lynx at a time when he should have been there protecting her but was, instead, wooing Joan. And Kazan's nobility is equalled, if not surpassed, by the counter-sacrifice with which Joan gives him back to Gray Wolf and contents herself with a biped.¹

Next to the horror of having to knit baby things with eight sleeves to clothe a little octopus, the most fearsome bogey that haunts the popular mind is that some unknown 'taint' of Negro ancestry may result in a white woman's bearing a coal-black child. Stories of this having happened are two-a-penny, though names and addresses are never furnished. The apprehensions they may give rise to, however, either in those who have 'crossed the line' or in those who go on the gloomy assumption that 'you never can tell,' are groundless. A genuine black-skinned child can be borne only if both parents carry the genes that make for a black skin. So that any woman, regardless of her ancestry, who, confident of her own marital fidelity, bears a coal-black child to a man apparently white need waste no time in apologies, but can proceed at once to upbraid him for having concealed *his* Negro blood.

Equally widespread is the belief that offspring sometimes inherit characteristics from a previous mate of their dam. The terms from animal breeding are used because, while the idea circulates in whispers concerning human beings, it

¹ 'The Lasting Bond,' by James Oliver Curwood. Reprinted in Ernest Thompson Seton: *Famous Animal Stories* (London: John Lane; 1933), pp. 358-69.

is a fully established error among fanciers and stockmen and has even been dignified, as a theory, with the scientific-sounding name of Telegony.

The notion is of great age and until comparatively recent years was assumed to be a fact even by men as eminent as Agassiz, Romanes, and Darwin. It was 'confirmed' by 'evidence' presented to the Royal Society in 1820 by a certain Lord Morton who had bred a chestnut mare with a quagga (a species of wild ass) and obtained a hybrid. The mare then produced to a black Arabian stallion, at different times, three foals all of which showed distinct quagga-like stripes, 'proving conclusively' that the germ cells of the mare had been 'infected' by the quagga.

Later in the century, however, Lord Morton's experiment was repeated, using a zebra instead of a quagga (the quagga, heedless of its scientific importance, having become extinct), and the second experiment not only failed to confirm Lord Morton's conclusions but definitely refuted them. Thirty mares were used this time, and it was found that not only did most of the subsequent foals sired by horses not have any markings, but that two pure-bred foals, out of dams that had never seen a zebra, did have such markings. So that it was plain that the markings on his later foals which Lord Morton had taken to be proof of the 'infection' of his mare were simply those stripings that occur naturally in certain breeds of horses (such as the Kattiawar or other Indian breeds) to one of which his Arabian stallion must have been related.¹

A common-sense argument against telegony is that if it were true later children, assuming they were legitimate,

¹ A full account of this remarkable and important investigation is contained in Professor Cossar Ewart's *The Penycuik Experiments* (1899), a summary of which is to be found in his article 'Telegony' in the 11th ed. of the *Encyclopædia Britannica*.

See also 'Telegony' in *Hutchinson's Dog Encyclopædia*.

would come more and more to resemble their father—a condition that observation does not support.

In direct opposition to the practice of animal breeders, who accomplish all their results by inbreeding, is the almost universal idea that the mating of closely-related human beings will produce some kind of degeneracy.

Biologically, it need not. All that inbreeding does is to accentuate characteristics. Charles Darwin married his first cousin, Emma Wedgwood, and their seven children became men and women of unusual talents and accomplishments. Cleopatra was the product of six generations of brother-sister marriages, and all accounts agree that she was extraordinarily clever and attractive. Byron had a child by his half-sister, and the child did indeed grow up to be erratic and unhappy; but then, so did his daughter by Lady Byron, who was no kin to him.

Of course, if there were some latent strain of weakness in a family—and there is in millions of families—such a union would be likely to bring it out. Furthermore, since only the unstable would be inclined to violate so powerful a taboo as that against incest, the children of an incestuous union would probably have a bad heredity anyway, and the chances are that their condition would be made still worse by an unfortunate environment.

Many other conditions at the moment of conception are popularly thought to affect the child: the age of the parents, their health, their mental condition, their diet, and even the weather and the state of the nation.

Thus it is widely held that if the father is drunk at the moment of conception the child will be feeble-minded, and 'proof' is presented in the form of feeble-minded children whose fathers are drunk often enough to justify any indelicate assumption. But the more likely explanation would be that the father is drunk because he is feeble-

minded and that the children are feeble-minded by heredity.

The biblical story of Jacob and his ring-straked cattle has been a great inspiration for ignorance. Almost any condition prevailing at the moment of conception is thought to affect the child. Bastards, 'got with a keener lust,' are commonly thought to be 'gifted with artistic promptings.' James Graham advertised his famous 'Celestial Bed' in the 'Temple of Hymen' as a sure cure for sterility because the mattress was stuffed with hairs 'procured at vast expense from the tails of English stallions.' Walter Shandy attributed most of his son's misfortunes to the fact that at a highly critical moment his wife had asked him if he had wound the clock, a question so irrelevant that he despaired of the child's ever being able to pursue a logical train of thought. And Guttmacher tells of a woman who established the legitimacy of a posthumous child by proving (a) that her husband had eaten fish the night the child was conceived, and (b) that the water in which the child had been bathed always had a fishy smell.¹

A claim that the weather at the time of conception determines the child's character has recently been advanced, with some *éclat*, by Dr. William F. Petersen in *The Weather*

¹ For Jacob, see Genesis, xxx, 27-43; for bastards, see *King Lear*, Act I, scene ii, 6-16, Dryden's *Absalom and Achitophel*, 19-20, and George Jean Nathan and H. L. Mencken: *The American Credo* (New York: Alfred A. Knopf, Inc.; 1921), Article 507.

For the magic mattress, see Alan Frank Guttmacher: *Life in the Making* (London: Jarrolds; 1934). And see James Graham in *The Dictionary of National Biography*. The assurance that the stallions were English is a fine blending of genetics and geography. Patriotism, by the way, is often an ingredient of some very strange metaphysical brews. Thus the American national association of spiritualists, in their annual convention at Cleveland, Ohio, in 1942, resolved that for the duration no medium should ask the spirit of a departed service man any questions whose answer might furnish military information to enemy agents lurking in the audience.

For Walter Shandy, see *The Life and Opinions of Tristram Shandy*, Chapter I. For the child with the fishy fume, see Guttmacher: *Life in the Making*.

as *Destiny*. Dr. Petersen's theory is that an individual's chance of becoming a leader is enhanced if he is conceived in a period of sunspot turbulence and foul weather. His chief exhibit is Abraham Lincoln, who was, he says, 'planted in the soft soil of his mother's uterus when the rain was falling' at the end of an unusually hard winter, a fact that made him tired, moody, and sensitive to the weather and to men. His tissues 'had been conditioned to the catabolic side, with their high oxidative trends,' and in consequence his whole organism swung 'in harmony with the universe.' His sensitiveness to the weather brought into focus the 'unexpressed subconscious reactions of the mass.' So endowed, he had the potentialities of the mystic or seer, and drew the confidence of men by expressing their 'unformulated and inarticulate' feelings.¹

Two doubts come into the sceptic's mind. The time of Lincoln's conception is, at best, a pretty vague conjecture. In the normal course of events, it would have been in the middle or the latter half of May 1808. Unfortunately for the theory, May in Kentucky is one of the most delightful seasons known. Dr. Petersen has an old diary to prove that there was a heap of rain during the first half of the month over at Lexington, not too far away; but, even so, Fate gave him almost the worst month in the year for his purposes.

Then, if Lincoln was so affected, so also (one assumes) were all other men and women conceived that night within the area subject to the same weather conditions. How many this might be is anybody's guess, but a hundred would be a conservative estimate. But if that many people of Lincoln's calibre, or half that many, were living in the United States during the nineteenth century, they were dominated by an amazing passion for anonymity. If in reply it is argued

¹ William F. Petersen: *Lincoln-Douglas, The Weather as Destiny* (Springfield, Illinois; Charles S. Thomas; 1943). pp. 156, 157, 169-70.

that Lincoln was an exceptional man upon whom, even as a zygote, the weather had an exceptional effect, the answer would be to agree with the first part of the statement and to shrug off the second as beyond proof or disproof.

That 'whenever men by hundreds of thousands give their lives in battle, statistics show that there is a definite increase in the percentage of boy babies born' may be so. There is some dispute about the statistics and, at best, the increase is very small. But it is certainly open to question whether this fact, even if true, gives (as a scientific publication has recently worded it) 'added emphasis to the theory that Nature may not only be trying to make up for lost lives, but is using every trick to contribute more males and so keep this world from becoming a dreary woman's domain.' Some authorities who believe that there was such an increase during and after the First World War attribute it to 'more child-bearing by young mothers, and more first births generally,' circumstances that are definitely known to favour the male birth ratio.¹

Time vaguely assigns the belief to 'minds troubled by worldwide death,' hedges by labelling it 'an old wives' saying,' and then goes wild and outdoes the oldest wife that ever said her say by trying to connect it, somehow, with the birth of twins to Susie, a kangaroo in the Philadelphia Zoo, 'the first U.S. record of kangaroo multiple birth.'²

If Mother Nature is really concerned about keeping 'this world from becoming a dreary woman's domain,' she had a splendid chance to demonstrate her power when the men of Pitcairn Island eliminated themselves (*circa* 1790), leaving only John Adams (alias Alexander Smith) for stud.

¹ *Science Digest*, September 1944, pp. 17-18. The figures for the United States showed no noticeable increase between 1939 and 1942. But the casualty lists could hardly have time to reach Mother Nature. See Amram Scheinfeld: *Women and Men* (New York: Harcourt, Brace and Company; 1944), pp. 34-35.

² *Time*, April 10, 1944, p. 44.

According to the theory, Captain Folger, when he visited the island in 1808, should have found a preponderance of boys learning their catechism at the pious and prolific old mariner's knee. But neither he nor, five years later, Sir Thomas Staines and Captain Pipon observed any such disproportion in the sexes of the rising generation of the Pitcairn-Smiths.¹

Such theories regarding conception and heredity are for the most part harmless. They serve chiefly to diversify conversation. But such is not the case with the widely held belief that 'sterilization' will 'eliminate the unfit.' Twenty-eight American states now have laws that permit or direct sterilization for various causes, and since their enactment some twenty-seven thousand persons have been sterilized in the United States.² If this should be an error, it is a pretty big one. And it must be confessed that there is much reason to think it is.

Most people who urge the sterilization of the unfit mean the socially unfit, yet the socially unfit and the biologically unfit are not necessarily the same. Consider the late, unlamented John Dillinger. He certainly gave society no reason to long for a lot of little Dillingers, and if he had been captured and if Illinois had had a sterilization law there would probably have been a strong demand for his sterilization as one eminently and obviously 'unfit.' Yet biologically it would have been a mistake, because the stuff of John Dillinger, for all the bad uses he put it to, was plainly superior human stuff. The man had intelligence, imagination, courage, strength, initiative, and remarkable powers

¹ See H. L. Shapiro: *Descendants of the Mutineers of the Bounty* (Honolulu: The Berenice P. Bishop Museum; 1929), p. 7; and *The Heritage of the Bounty*, by the same author (New York: Simon and Schuster; 1936). See also John Adams, 'known as Alexander Smith, seaman, mutineer, and settler,' in *The Dictionary of National Biography*.

² Amram Scheinfeld: *You and Heredity* (London: Chatto and Windus).

of leadership. He turned these against society, and society liquidated him. But society sustained a double loss: Dillinger was potentially an asset.

In actual practice, 'unfitness' (as J. B. S. Haldane has shown in his studies of some American cases) may consist merely in poverty or in unwillingness to be respectful to a judge. Scheinfeld says that wholesale sterilizations were carried out in a Kansas institution for girls because some of the girls were obstreperous and fought their guards.¹ Yet obstreperousness, however infuriating to people in power, is not in itself a vice. Under the name of 'The Spirit of '76' there is a pretence, at least, of admiring it.

Many would grant all this who would still insist on the value of sterilization. There are those, they say, who are plainly biologically unfit, and they should unquestionably be stopped from reproducing. But when the sceptic, whose brash lexicon wholly lacks the word 'unquestionably,' asks for specific illustrations, he is invariably answered with 'the feeble-minded.' And when, to continue the discussion, he suggests that 'feeble-mindedness' is a fairly vague term and brings up genuine biological undesirables—albinos, mutes, epileptics, and the short-fingered—he usually meets with an uneasy silence. Fanatics will say yes, sterilize them, by all means; but the average man who talks big in a vacuum, or is quite willing to be cruel towards those who frighten him, does not like the thought of 'mistreating unfortunates.'

But even if it could be fully agreed who is and who is not 'unfit,' the problem of elimination is not so simple as the layman thinks. The basic error in popular reasoning on the subject is the assumption that those who exhibit a defective condition are the only ones who carry the genes that produce it. But, unfortunately, this is not the case. Bad

¹ J. B. S. Haldane: *Heredity and Politics* (London: George Allen and Unwin).
Scheinfeld: *You and Heredity*.

genes are for the most part recessive—if they were not, there just wouldn't be any human race by now. That is, they are carried, generally speaking, by 'normal' people in whom they don't show and in whose descendants they show only if these 'normal' people happen to marry other 'normal' people who are also carrying the same bad genes. So that the problem is not to prevent abnormal people from reproducing, but to prevent all normal people from reproducing who might produce abnormal people.

The difficulty of the problem is indicated by the fact that almost all human albinos are the children of normal parents. So, often, are epileptics, and even the feeble-minded.

Conversely, the abnormal may produce quite 'normal' children unless they happen to mate with an abnormal partner. It takes two to make a moron. College textbooks in sociology are often enlivened by the story of an old Revolutionary War hero who upon the death of an amiable and intelligent consort ran amok and married a tavern slattern. From the first union, so the legend runs, came a stream of descendants of such virtue, ability, and civic highmindedness that they practically had to stand in line for their turn at the available bishoprics, governorships, and college presidencies; while from the second came a staggering percentage of the region's delinquent and insane. The moral is, plainly, that a surgical stitch in time would have saved at least nine tax assessments. But the weakness in the story, as viewed by more recent knowledge, is that if all the children by the second wife were defective, then there must have been a recessive strain of feeble-mindedness in the old hero himself, and he ought to have been sterilized too. Then who would have begot the governors?¹

¹ See Henry H. Goddard: *The Kallikak Family* (New York: The Macmillan Company; 1912. Reissued, 1939). That the progeny of the first union were all

If sterilization is going to accomplish anything, *all* who *carry* the undesirable genes must be eliminated. And, since they cannot be distinguished until after they have produced a defective child, all who *might* carry such genes must be eliminated. That is, not merely criminals, morons, epileptics, hæmophiliacs, deaf-mutes, those having Huntington's chorea, and so on, but all who number any such undesirables among their relatives, which—particularly if you permit the relatives to decide—includes practically the entire human species.

'thoroughly good' is attested, in Dr. Goddard's opinion, by the fact that they have all been 'owners of land or proprietors.'

The Jukeses and the Kallikaks play so prominent a part in the lore of American sociology that it may be worth while to indicate where their legend can be examined. See R. L. Dugdale: *The Jukes* (New York: Putnam's; 1888). Henry H. Goddard: *Feeble-Mindedness: Its Causes and Consequences* (New York: The Macmillan Company; 1914); and 'In Defense of the Kallikak Study,' *Science*, June 5, 1942, pp. 574-76.

For a refutation, see Abraham Myerson: *The Inheritance of Mental Disease* (Baltimore: The Williams & Wilkins Company; 1925), pp. 77-80. And see Amram Scheinfeld: *You and Heredity*; and 'The Kallikaks After Thirty Years,' *Journal of Heredity*, September 1944, pp. 259-64.

Chapter Nine

HARK, FROM THE WOMB!

ONCE conception has been accomplished a further set of delusions obtain. Chief of these is the belief that certain impressions made on the mother during her pregnancy will affect the child. Of late years it has been held that pleasant impressions will have a beneficial effect and that the expectant mother should therefore keep herself cheerful, listen to good music, and frequent art galleries. H. L. Mencken says that it is an absolute article of the American Credo 'that if a woman about to become a mother plays the piano every day, her baby will be born a Victor Herbert.'¹

That, however, is modern and would strike most believers in prenatal influences as namby-pamby; for your true prenatal influence is almost always bad. If the mother is mournful, her tears may drown the child in her womb.² If she sees something terrible, her child may be a monster or at least will be marked with a *nævus* shaped liked the thing seen. If her longings go unsatisfied, the child will lack some vital organ. And so forth.

Nothing is more feared than such influences. Eng and Chang, the original Siamese twins, were not allowed to appear in public when they were children in Siam because King Chowpayhi believed that the sight of them would have a bad effect on all pregnant women. And later the

¹ George Jean Nathan and H. L. Mencken: *The American Credo* (New York: Alfred A. Knopf, Inc.; 1921), p. 109.

² Shakespeare: *Henry VI* (3), IV, iv, 23-24.

French government refused to allow them to enter France for the same reason.¹

Nor is the fear lacking in 'proof.' Folklore abounds with stories of women who, in consequence of some fright or other experience, have given birth to strange creatures. The most famous, and probably the most fertile, of all such women was Mrs. Joshua Tofts, of Guildford in Surrey, who in November 1726 claimed that, as a result of having been frightened by a rabbit while working in a field, she had given birth to a litter of rabbits. She substantiated her claim by producing not only fifteen rabbits but also the attestation of Mr. John Howard, the local midwife, who professed to have been in attendance during her remarkable delivery. Mr. St. André, 'Surgeon and Anatomist to His Majesty,' was summoned and declared (in *A Short Narrative of an Extraordinary Delivery of Rabbits*, London, 1727) that he had assisted at the birth of two more. The event—which would indeed have been sensational in a rabbit—became the talk of the town, and George I sent Ahlers, his official surgeon, to investigate. Ahlers got only a part of a rabbit, and withdrew from the case in a huff when the more successful Howard questioned his professional skill. Two other obstetricians were then appointed, and they declared the whole thing to be a hoax. But the general public was not convinced, and the 'miracle at Guildford' agitated Europe for many years. No fewer than nine pamphlets and books were written pro and con, and a special edition of these, bound in rabbit skin by an enterprising bookseller, is still a bibliophile's item.²

No equal notoriety has attended any subsequent case, but

¹ Alan Frank Gutmacher: *Life in the Making* (London: Jarrolds: 1934).

² Mrs. Tofts and her brood have scurried across the pages of many books. The best brief account is that in *The Dictionary of National Biography*, vol. XIX, pp. 915-17.

stories of such unnatural births are part of the whispered scandal of every village.¹ By the end of the nineteenth century most educated people were beginning to have doubts about them, but their doubts required some courage, for the medical journals were flooded with 'testimony' from physicians who insisted, on the basis of their own 'observations' and 'experience,' that prenatal influence was an established fact. Havelock Ellis (who, by the way, was not willing to dismiss the possibility of such a thing being true) collected a remarkable list of these testimonials from the solemn pages of the *Lancet*, the leading British medical journal. They deal for the most part with skin blemishes, but there is a sprinkling of monsters and one interesting story of a fox terrier who broke her foreleg and a few weeks later whelped a pup with only three paws.²

Such importance was formerly attached to a pregnant woman's longings that in many parts of England 'longing' was a euphemism for 'pregnant.' It was believed, as has been said, that if these desires were balked the child might be imperfect. In many places, as a matter of public policy, pregnant women were permitted certain liberties in order that they might not burden society with deformed children. They were allowed to pilfer certain foods, and among the new laws promulgated by the French Revolution (though afterwards repealed by Napoleon) was one according special consideration to pregnant shoplifters.

¹ For a story of a woman at Bourg who was delivered of six puppies, see Gertrude Stein: *Wars I Have Seen* (London: B. T. Batsford).

In 1918 the author, when a boy, heard that a woman at Miamisburg, Ohio, had been delivered of a litter of rabbits.

The public is vastly interested in miscegenation. See *Time's* solicitude for Nora, a chimpanzee presumably pregnant with a human child: June 28, 1926, pp. 22-24; August 16, 1926, p. 16; February 14, 1927, pp. 34-35; and January 9, 1933, p. 35.

² Havelock Ellis: *Studies in the Psychology of Sex* (Philadelphia: F. A. Davis Company; 1914), vol. V, pp. 218-20.

The longing, especially for fruits and vegetables out of season, was regarded in itself as definite proof of pregnancy. Thus in Webster's play, *The Duchess of Malfi*, it was the Duchess's frantic eagerness for apricots, offered to her as a sort of Ascheim-Zondek test, that proved to her suspicious brothers that she was with child. And Joanna Southcott, an aged prophetess who in 1814 claimed to be gravid with the second coming of Christ, supported her claim by eating one hundred and sixty heads of asparagus at a sitting, it being generally conceded that such an extraordinary appetite for such an extraordinarily expensive vegetable as asparagus then was could proceed only from one who was pregnant in some extraordinary way.¹

That the sex of a child can be foretold by certain signs is held by millions. Some even extend their prescience to chickens, maintaining that cocks come from long eggs, hens from round ones—an assertion which, as Sir Thomas Browne said, 'experiment will easily frustrate'. Among human beings the indications are thought to be the apparent position of the foetus and the physical condition of the mother. Guttmacher questioned fifty patients, white and coloured, in the maternity wards of the Johns Hopkins hospital and found that almost all were sure that they could foretell the sex of their expected child. Some said that kicking on the right side showed it would be a boy, or kicking on the left side showed it would be a girl. 'Carrying high' indicated a boy; 'carrying low' a girl. Loss of the mother's hair during pregnancy indicated a girl; the growth of thick hair, a boy. A longing in the mother for sweet foods showed it was a girl; for sour foods, a boy. Nausea early in

¹ See 'Longing,' 2, in *The Oxford English Dictionary*.

John Webster: *The Duchess of Malfi*, Act 2, scene 1.

For Joanna Southcott, see *The Dictionary of National Biography*, vol. XVIII, pp. 685–87. For the asparagus, see John Timbs: *English Eccentrics and Eccentricities* (London: Chatto and Windus; 1875), p. 201.

pregnancy indicated a boy: 'Boys always make me sicker,' one veteran said.

Most of these curious notions have been in circulation for at least twenty-five hundred years, Guttmacher says. And one of them—that the sex of the child can be determined from the side on which it is carried—can be traced to an error promulgated by Parmenides of Elea, in the fifth century B.C.¹

A belief that one often hears concerning pregnancy and birth is that a seven-month child will live but an eight-month child will die. The fallacy is as old as Hippocrates and so widespread that as late as February 1944, the *British Medical Journal* thought it worth space to refute it. If we exclude all cases where the foetus is unduly large or post-mature, and thereby subject to injury at birth, says the *Journal*, all evidence shows that the more complete the development of the child 'the better are its prospects for survival.' Statistics utterly refute the popular belief, which has no better support, it would seem, than the magic of the number seven.²

Other erroneous notions concerning coition and conception are that frigid women are sterile, that eunuchs do not desire and cannot have sexual relations, that children have been known to cry out in the womb, and that a woman cannot conceive while giving suck and will therefore be infertile until the child is weaned.

Such investigations as have been conducted have failed to support the first of these beliefs.

The second has been the subject of a great deal of jesting for centuries and forms the whole motif of one of the most

¹ Guttmacher: *Life in the Making*.

² The *British Medical Journal*, February 19, 1944, p. 276.

For the statistics, see Potter and Adair: *Foetal and Neonatal Death* (Chicago: The University of Chicago Press; 1940); and C. McNeil, the *Edinburgh Medical Journal*, vol. 50, 1943, p. 491.

scurrilous but amusing plays in English, Wycherley's *The Country Wife*. But it is an error. Many eunuchs are sexually competent. If the castration is carried out after maturity has been achieved, desire and potency are often very little impaired.¹

That infants have cried out in the womb is an eerie fancy worthy of Poe, but, despite many 'authentic' cases reported in the medical journals, it is a physical impossibility except when the child is in the process of being born. Fœtuses do hiccup, and movements of the chest similar to those used in breathing have been observed as early as the fifth month. But since vocal sounds are caused by the passage of air through the larynx, and since the child is enclosed in the fluid-filled amnion and hence can get no air, these movements, whatever their significance, could not produce a cry.²

Whether it does any good to talk to the child while it is still in the womb is a moot point. Dr. Fishbein thinks it would be a complete waste of time. But Alfred E. Johns, Professor of Psychology at Hunter College, believes that you can't get to work on morale too soon and that 'the mother-to-be should talk to the baby, telling it how healthy it is to be all its life and outlining plans for the future.'³

¹ Hugh Hampton Young: *Genital Abnormalities, Hermaphroditism, and Related Adrenal Diseases* (London: Baillière and Company). He adds: "McCarthy reports 23 eunuchs in which castration had been carried out, and ten of these had subsequently acquired gonorrhea. There is one interesting case of a castrate marrying nine years later and leading a normal sexual life."

² *The Reader's Digest*, December 1944, p. 57. George M. Gould and Walter L. Pyle: *Anomalies and Curiosities of Medicine* (Philadelphia: Saunders & Co.; 1897), pp. 127-28, 'Antepartum crying of the child,' gives a number of fabulous cases of children crying in the womb.

For an actual case of one that cried 'for about four or five minutes' while being delivered, see 'A Child Crying in Utero,' by Dr. McLean, *American Journal of Obstetrics*, vol. 22, p. 166. And see W. F. Windle: *Physiology of the Fetus* (Philadelphia: Saunders & Co.; 1940), pp. 94-95, for the hiccups.

For the chest movements, see C. A. and M. M. Aldrich: *Babies Are Human Beings* (New York: The Macmillan Company; 1943), p. 4, where it is suggested that unborn babies suck their thumbs, just to get in practice.

³ *The Chicago Daily News*, January 26, 1945, p. 3.

That women are infertile while nursing would seem to be refuted by the millions of brothers and sisters born within a year of each other, unless it is claimed that in each instance the elder child was weaned within three months. And certainly, whatever obtains among human beings, there is no doubt that animals can be impregnated while nursing. The female sea lion is pregnant three hundred and sixty-four days a year, sometimes a little more, and Guttmacher says that he has seen a guinea-pig 'successfully served half-an-hour after her labour was completed.'¹

None the less, the belief that human beings are different in this respect is widely held, and women all over the world suckle their children late for this very reason. The Trobriand Islanders put off weaning until the child says plainly that it prefers solids; Congo mothers never wean their children until they are two or three years old; and a traveller from Java reports having seen native children throw away their cigarettes when they were ready to suck, though he confesses that they begin smoking early.²

After coition, conception, pregnancy, birth, and lactation comes menstruation, which, like all other functions of the reproductive organs, is surrounded by popular fallacies. Most of them have to do with taboos: that women should not bathe during menstruation or eat cold things, and that intercourse with a menstruating woman will make a man sick, and, if the union prove fertile, will produce feeble or insane children. The menstrual flow is thought to exude some

¹ Guttmacher: *Life in the Making*. His authority for the sea lions is John Rawley: 'Life History of the Sea-lions on the California Coast,' *Journal of Mammalogy*, February 1929, p. 1.

² For the Trobriand Islanders, see Bronislaw Malinowski: *The Sexual Life of Savages in North-Western Melanesia* (London: G. Routledge and Sons; 1932), vol. I.

For the Congo mothers, see W. E. Davis: *Ten Years in the Congo* (New York: Reynal and Hitchcock; 1938), p. 224. The news from Java is an oral relation from Mynheer Edouard Delden, of Surabaya.

evil influence that causes glass objects to break, sours cream, spoils wine, and makes cakes and other baked things fall.

Syphilis and measles were the diseases formerly thought to be acquired by copulating with a menstruating woman; today insanity is chiefly feared. The old inhibition against bathing, maintained in rural America until this generation, certainly gave the hygienic taboo æsthetic support. That the children of such a union would at least be sickly was, and is, generally held. The weakness of Catherine de' Medici's children was commonly attributed to their being so conceived, and those who regard Leviticus as a treatise on public health have sought to justify the ferocious Mosaic prohibitions on this ground. Freud felt that the aversion is basically motivated by the superstitious dread of blood, although he confessed that this dread might be made to serve æsthetic and hygienic purposes.

The amount of blood lost at this time is commonly overestimated. Hooton speaks of 'the exaggerated loss of blood which is a feature of the oestrous cycle in the human female' as though, 'equalled in no other mammal,' it were some dreadful handicap our species had to carry. Actually, the loss is about four tablespoonfuls.¹

Many women, and even some physicians, believe that a menstruating woman should avoid anything iced, apparently on the assumption that the cold will 'freeze' the flow. This belief is curious in that, unlike most fallacies, it must be of fairly recent origin, or at least of fairly recent general application, for it is only within a few generations that people in any numbers have had an opportunity to eat iced foods. Yet the idea seems old, and fears of the 'stoppage' of the flow were formerly large in prognosis.

¹ Earnest Albert Hooton: *Twilight of Man* (New York: G. P. Putnam's Sons; 1939), p. 292.

For the actual amount lost, see Amram Scheinfeld: *Women and Men* (New York: Harcourt, Brace and Company; 1944), p. 115.

The belief that the catamenial discharge exercises a malignant influence over all near-by objects was stated by Pliny with his usual assurance. At the approach of a menstruating woman, he says, must becomes sour, seeds become sterile, plants are parched, and fruit drops from the trees. Her very glance will dim mirrors, blunt knives, kill bees, and cause brass and iron to rust and to 'emit an offensive odour.' The intervening twenty-five hundred years have subtracted some items from Pliny's list and added others, but the basic belief prevails in most parts of the world. Women are excluded from French perfumeries, sugar refineries, and wineries during their periods, lest they spoil the products; and many beauty specialists advise against a permanent wave during the menstrual period, alleging that it will not 'take' then.¹

That such persistent and universal beliefs may have some foundation in fact has been claimed by certain modern investigators who profess to have found a substance which they call menotoxin in the perspiration of menstruating women, a substance of such toxicity that microscopic amounts of it, they claim, are able to produce many of the effects formerly ascribed to the 'influence' of such women. But other investigators have been unable to confirm these findings, and the problem is at the moment unsettled.²

The most open-minded scientist, however, has confined his conjectures to the effect on living things that might

¹ *The Natuwall Historie of C. Plinius Secundus*. Translated into English by Philemon Holland (London: 1601), p. 44.

The prohibition with respect to the handling of wine, by the way, is clearly stated in the *Talmud* (*Midrash Wayyiqra*) in the tale of the Rabbi Gamaliel and the maidservant Fabritha.

And see M. F. Ashley Montagu: 'Physiology and the Origins of the Menstrual Prohibitions,' the *Quarterly Review of Biology*, June 1940, pp. 211-20.

Some women say that their hair is very oily at the time of menstruation. If it were, it might affect the 'taking' of a permanent wave.

² All the evidence, pro and con, is assembled in Ashley Montagu's article above.

conceivably be affected by some such toxin. It needs no mystical aura or subtle toxin to explain broken dishes and fallen cakes. Many women are unusually irritable just before, during, or just after their periods, and depressed and anxious as well. Men in the same emotional state cut themselves while shaving, scrape bumpers while parking, and quarrel with their associates and assistants. Women break dishes, scold the children, weep on the slightest provocation, and feel most ill-used. Their cooking, especially, goes wrong. But this hardly implies the supernatural interference that a complacent husband may suppose. Cooking requires the close integration of a number of precise operations, under the most difficult circumstances, and is just the sort of thing that nervousness can spoil.

Other common delusions about menstruation are that its onset is earlier in warmer climates, that it is impossible for a girl to bear a child until she begins to menstruate, that it is confined exclusively to human beings, and that it is in some mysterious way controlled by the moon.

As for the first, Stefansson found that Eskimo girls mature at about the same age as ours, and Malinowski noticed no difference among the Trobriand Islanders.¹

The second has been disproved by scores of unfortunate children, among whom perhaps the most striking and pitiful was Lina Medina, who at the age of five years and eight months was delivered, May 14, 1939, of a perfectly healthy infant at the Maternity Hospital in Lima, Peru. Many similar instances have been recorded.²

¹ Vilhjalmur Stefansson: *My Life with the Eskimo* (London: G. G. Harrap). Malinowski, *The Sexual Life of Savages*, chap. III.

² Edmundo Escobel: 'La plus jeune mère du monde,' *La Presse Médicale*, Paris, vol. 47, May 31, 1939, p. 875. For further instances (among scores) see: R. H. Carver, 'A case of early maternity,' *Providence Medical Journal*, 1909, x, pp. 83-85. A. J. Mann, 'Another case of precocious motherhood,' *American Journal of Clinical Medicine*, Chicago, 1910, XVII, p. 1131. V. I. Pittman,

Pliny's statement that the human female alone menstruates has been repeated for nineteen hundred years, although, like most of his statements, it is incorrect. The females of all apes and Old World monkeys menstruate, though the fact is not immediately apparent as they are usually pregnant. It is a curious reflection that the menstruation of women is, in a sense, 'unnatural,' being largely a phenomenon of civilization. In the natural state it would probably be a rare occurrence, and for most women the natural state, in this respect, existed until about two generations ago, when what women now call 'the curse' was called 'the benefit.'¹

That the moon controls menstruation is an unwarranted deduction from the fact that the average menstrual period of twenty-eight days approximates to the average lunar month of twenty-nine and one-half days. It is probably a learned rather than a vulgar error, since it is unlikely that any ordinary woman would have ever observed the correspondence except in rare instances when the period was a little longer than the average and when it happened to coincide with some marked lunar phase, such as the new moon or the full moon. The learned, however, have had an 'Childbirth at the age of nine,' *American Journal of Clinical Medicine*, 1908, XV, p. 798. U. V. Williams, 'Another Precocious Mother,' *American Journal of Clinical Medicine*, 1911, XVIII, p. 102. L. M. Allen, 'Pregnancy at the age of eleven years terminating in a natural delivery,' *Maryland Medical Journal*, Baltimore, 1901, XLIV, pp. 416-21. W. W. Kerns: 'A very young mother,' *Medical World*, Philadelphia, 1905, XXIII, p. 26. This child was eleven years, six months, and twenty-one days old at the time of her delivery.

There are many other such cases.

¹ For the menstruation of monkeys, see S. Zuckerman: *Functional Affinities of Man, Monkeys and Apes* (London: Kegan Paul, Trench, Trübner & Co.; 1933), p. 40.

Between 1683 and 1700 Queen Anne bore seventeen children. She differed from other women of her time only in the sad fact that *all* of her children were born dead or died in infancy.

This meaning of the word "benefit" is not recognized in any standard dictionary, but see Lillian de la Torre: *Elizabeth Is Missing* (London: Michael Joseph; 1947).

orgy of speculation with it. Thus Professor Gerson, a dreamy Teuton, recently elaborated a stimulating theory that menstruation had become established as a biologicolunar function in consequence of primitive man's hunting his females on moonlight nights and setting up in them, as they excitedly fled, an anticipatory uterine hyperemia that in time overflowed into menstruation. Such are the reveries of the studious!

More recently, however, Drs. Gunn and Jenkin, substituting a prosaic examination of 10,416 women for Professor Gerson's moonlit meditations, found that menstruation occurred at all times of the month, regardless of the lunar cycle, and concluded that there is 'no justification whatever for associating the date of menstruation or its rhythm with lunar phenomena.'¹

¹ A. Gerson: 'Die Menstruation, ihre Entstehung und Bedeutung,' *Zeitschrift für Sexualwissenschaft*, 1920, Band 7, pp. 18, 63, 88. D. L. Gunn, P. M. Jenkin, and A. L. Gunn: 'Menstrual Periodicity,' the *Journal of Obstetrics and Gynecology of the British Empire* (Manchester), vol. 44, 1937, pp. 839-79.

RIGORS OF MORTIS

THE most sensational scoop of the Russo-Finnish War, the story of the Russians who 'froze as they fell' and 'stiffened into queer positions of death,' could hardly have filled so many newspaper and magazine columns as it did had it not been for our general misconceptions regarding both Russians and death.¹

That wounded men should freeze instantly, as these were said to have frozen, is patently absurd to anyone who has ever killed even a chicken at sub-zero temperatures. A man has about a gallon of blood, and as long as he is living this remains at a temperature of approximately 98° Fahrenheit, and no degree of cold ever known, inside or outside a laboratory, would freeze that much liquid at that temperature instantaneously. It takes several seconds to congeal a small goldfish at -200° Centigrade,² and a goldfish is chillier than a Russian to begin with. So that, however ill-clad or malnourished the cannon-fodder of the godless Bolsheviks may have been when the Finnish bullets struck them, they still had time to relax before they hit the ground.

The yarn seems to have been begotten by Russophobia

¹ See almost any American newspaper during January and February 1940. The English papers were worse. For a study of their antics, see W. P. and Zelda Coates: *The Soviet-Finnish Campaign*, 1939-40 (London: Eldon Press; 1941). And see: the *Chicago Daily News*, January 3, 1940, p. 1; the *New York Times*, January 8, 1940, 4:2; 'Frozen Forest of the Dead' by Leland Stowe, the *Reader's Digest*, March 1940, pp. 64-66. For pictures, see *Life*, January 29, 1940, p. 58; February 12, 1940, pp. 28-31; and *Time*, January 22, 1940, p. 31.

² An oral communication from Professor L. I. Bockstahler, in charge of the Northwestern University Institute of Technology's special laboratories for studying the effects of extreme cold.

out of Rigor Mortis, that mysterious and permanent stiffening which, in the popular mind, seizes instantaneously upon the unwary dead. True rigor mortis sets in gradually, from three to five hours after death, lasts (usually) from twelve to twenty-four hours, and then gradually fades away, leaving the body limp again. Sometimes, particularly at the moment of a violent death, there is a convulsive clutching of the hands, known as 'cadaveric spasm,' that does justify some of the stories one hears of 'the death grip.' But it does not occur in whole battalions.¹

The chief illusions bred by the fear of death are such 'sacred and awful truths' to most men that a dispassionate analysis of them would be impossible. There remain, however, enough minor ones to more than fill a chapter.

That dying men 'go out with the tide' has long been believed. It was 'e'en at the turning of the tide' that Sir John Falstaff departed, and the 'calling of the sea' took Enoch Arden three hundred years later. The 'willin' ' Barkis was similarly floated into eternity. 'People can't die along the coast,' Mr. Peggoty informed David Copperfield, 'except when the tide's pretty nigh out. They can't be born unless it's pretty nigh in—not properly born, till flood. He's a going out with the tide. . . . If he lives till it turns, he'll hold his own till past the flood, and go out with the next tide.'²

An even more firmly established literary prop is the 'death rattle.' Popular authors would be hard put to indicate approaching dissolution without it. 'We all die with a rattle,' says Melville firmly. Yet many die without making

¹ See LeMoyne Snyder: *Homicide Investigation* (Springfield, Illinois: Charles C. Thomas; 1944), pp. 24-26; and M. Edward Marten: *The Doctor Looks at Murder* (New York: Doubleday, Doran & Company, Inc.; 1937), p. 265. Dr. Snyder is the Medicolegal Director of the Michigan State Police, and Dr. Marten is the Deputy Chief Medical Examiner of the City of New York.

² Shakespeare, *Henry V*, II, iii, 13-14. Tennyson, *Enoch Arden*, lines 901-908. Dickens, *David Copperfield*, chap. XXX.

the sound, and many others make it and live on. Actually, it is nothing more than a form of snoring or gargling, due to a lack of the usual control over breathing. But what writer could bring himself to say that a dying hero or heroine began to snore or gargle?

Of all forms of death, drowning, for some reason, seems to be the focus of more vulgar errors than any other. Of these the most common are that drowning men always 'see their lives pass before them' and that they are lost 'if they go down for the third time.' A curious belief, of great antiquity, is that drowned women float face upwards, men face downwards.

That a drowning man sees his entire life pass in review before him is one of those conceptions that endure because they are irrefutable, since it may be insisted that, strictly speaking, a drowning man is one who subsequently drowns and that therefore the testimony of anyone who survives is inadmissible. If such testimony is accepted, however, and it is the only testimony we have, the belief is without foundation. The question was agitated some years ago in *Notes and Queries* and numerous witnesses came forward to testify that they had been unconscious in the water, and had been rescued and revived, without experiencing any visual summary of their careers.¹

Hardly a man who gains his moments of fame and two inches of newspaper space by being saved from drowning but asserts vociferously that he was 'going down for the third time' and would certainly have perished had he not been rescued at that very moment. 'I'd be in a coffin today if it hadn't been for him. I was down for the third time when he grabbed me,'² is the classical form. To confess less

¹ *Notes and Queries*, 1916, issues of January 29, p. 97, February 26, pp. 177-78, and March 25, p. 258.

² Thus spake William J. Kelly, 27, of 4800 W. Grand Avenue, Chicago, according to the *Chicago Sun*, July 20, 1944, p. 17.

would, of course, be to *be* less. It would arouse in every reader doubts of the genuineness of the claim to have been truly drowning and would mark the claimant, perhaps, as some panicky bather who merely got his head under the water, or, worse still, as the ridiculous victim of some overzealous lifeguard. But the 'third time' does it; it is the hallmark of aqueous mortality.

That drowned women float face upwards and drowned men float face downwards is a notion that so ludicrously attributes either prurience or prudery to Nature that those who hear it for the first time can hardly believe that it was ever seriously entertained. Yet it is firmly held by many thousands, some of whom have had considerable experience in dealing with the drowned. Thus *Time* quotes Captain John T. Cronin, 'the deceptively delicate-looking' Commanding Officer of the Missing Persons Bureau of New York City, as saying that if a certain missing girl were drowned in the East River there was a strong chance that her corpse would be found. 'We're just getting our December bodies up now,' he said, 'but they come up quicker in the springtime—men face down, women face up.'¹

Sometimes the positions are reversed: the women are face down and the men face up. But in either situation the idea seems to be that there is a sort of modesty in Nature—for it is unthinkable, ever since Wordsworth addled the vulgar mind with his equation of God and Nature, that the populace could conceive of a deliberate *immodesty* in Nature. The Greeks had a word for it, but the Grundys haven't even the idea. The difficulty of the theory, however, is that it is impossible to conceive of any division of proneness or supinity between the sexes that could satisfy even the most lenient standards of modesty. None the less, the belief persists.

¹ *Time*, April 24, 1944, p. 22.

Other forms of death have their own special lore. It was long believed, for example, that a man falling from a great height was always dead before he hit the ground, killed, in some mysterious way, by 'the speed of his fall.' Free falls with parachutes, however, in which the opening of the chute is deliberately delayed for many thousands of feet, have become so common that the belief has vanished.

It is worth mentioning, though, because it illustrates how firm conviction can be in matters concerning which there cannot possibly be any conclusive evidence. With what uncompromising certainty we used to be assured that 'he never felt it! He was dead *long* before he hit the ground!' Yet the narrator could have known nothing whatever about it and was, as we now know, utterly wrong.

The belief also illustrates how difficult it was not very long ago to obtain some bits of information that are now universally available. Until the invention of the parachute it was almost impossible to test this particular assertion because those who made it always postulated a height that ensured death on landing. Yet the problem was investigated with some care, and minute shreds of evidence even then suggested that the popular conviction was a fallacy. Ackermann relates a pathetic story of an altruistic boy who, in the year 1856, was heard to cry out 'Below' three times as he fell down a mineshaft, 'unselfishly warning his mates to get out of the way' and at the same time demonstrating his own continued, though brief, vitality. The story of a Parisian window-cleaner who in the course of a fatal descent was heard to observe, 'I'm all right so far,' as he passed a third-floor window, was contributed as further evidence but was rejected by the medical authorities as being suspiciously waggish.¹

¹ See the *Lancet*, London, 1889, ii, p. 466; and October 15, 1910, pp. 1148-49. And see George M. Gould and Walter L. Pyle: *Anomalies and Curiosities of*

A curious belief that had considerable currency in the days of the temperance crusades and still lingers on is that alcoholics sometimes die of spontaneous combustion. Old Krook, the junk dealer in Dickens's *Bleak House*, after a lifetime of soaking himself in brandy, disappeared in this interesting manner, leaving merely 'a small burnt patch of flooring, a smouldering suffocating vapour in the room, and a dark greasy coating on the walls and ceiling.'¹

That the human body changes weight at the moment of death is believed by great numbers of people who, however, divide themselves into opposing camps—the lighter-weights and the heavier-weights.

Those who believe that the body becomes lighter seem to think that the soul has weight, weight that must of necessity depart with it, and—with that brisk disregard of strict veracity which so frequently marks discussions of this nature—have claimed that dying men, at the very moment of their decease, have been placed on delicate scales that have recorded their mortuary degravitation. But these persons have never been able to specify in just what ghoulish laboratory this took place, or what private home was so interestingly equipped, or the names and addresses of the relatives who so commendably placed scientific and religious curiosity before sentimental concern for the patient's comfort.

Formerly, by the way, there were those who seemed to think that the soul had bulk also. In primitive Christian art it was frequently depicted as a sort of gremlin coming out *Medicine* (Philadelphia: W. B. Saunders; 1897), p. 705. See also A. S. E. Ackermann: *Popular Fallacies Explained and Corrected* (London: Old Westminster Press; 3rd edition, 1924), pp. 66–68.

In 1941 Arthur Starnes dropped 29,300 feet in a free fall. He retained consciousness all the way. His greatest speed was 209 miles an hour. See *Time*, November 3, 1941, p. 34; and the *Reader's Digest*, January 1942, pp. 81–82.

Major Boris Kharakhonoff, of the Soviet Air Force, dropped more than seven and one-half miles before he pulled the rip cord and opened his parachute. See the *New York Times*, July 22, 1940, p. 30, col. 2.

¹ *Bleak House*, chap. XXXII.

of the corpse's mouth, often inside a balloon like those that enclose the words of comic-strip characters.

More prevalent is the other belief, expressed in the phrase 'dead weight,' that a body weighs more after death. But it only seems to weigh more. We carry our own bodies about so easily that we are unaware of what an exertion it really requires. And when, in some emergency that forces us to bear the additional weight of another body, we feel a gravitational pull of from two hundred and fifty to three hundred pounds, we are astonished and assume that the other body has somehow acquired additional heaviness. The weight of a corpse, or even of an amputated limb, is startling when felt for the first time. A husky man, flourishing his arms about, has no idea that they weigh as much as twenty-pound sacks of sugar; and a jitterbugging girl doesn't realize that she is throwing a couple of forty-pound legs around as if they were ping-pong balls—she just feels 'hep' and winded.

That the hair and finger nails continue to grow after death was believed by the credulous Pliny, the incredulous Samuel Butler, and, no doubt, by several hundred million more or less credulous people, who lived between them. It is still widely asserted as a fact, and supported by highly interesting descriptions of coffins which, on being dug up years after the interment, were found to be as stuffed with hair as an old-fashioned sofa. A Dr. Caldwell of Iowa, writing in the *New York Medical Record* in 1877, described an exhumation, at which he said he was present, in which the hair and beard of a man who had been clean-shaven at burial had actually burst the coffin and were growing through the cracks; and Gould and Pyle, in their *Anomalies*, tell of a corpse that had to have its hair cut regularly. Most other narrators are content with a less luxuriant growth, but that some growth takes place after death is one of those

universal errors that satisfy something so deep in the common psyche that mere evidence to the contrary has little effect against them.¹

Very few people, it is safe to assume, have ever measured the hair on a corpse at stated intervals. Ninety-nine per cent or more of all such stories are simply hearsay. For the one per cent or less there is perhaps a slight justification in the fact that after death the shrinking of the softer tissues around the base of the hair may cause it to extrude above the surface of the skin as if it had grown slightly. And the shrinkage of the flesh at the end of the fingers might support some such delusion regarding the finger nails. Some have maintained that there might be something to it in so far as the separate hair cells continue an independent existence after the body as an organism has ceased to live. But with the cessation of the oxygen cycle when breathing and circulation stop, this could hardly be for more than two or three hours at the most, a period too short to produce any appreciable growth.

Suicide is a focus of popular fallacies. It is commonly assumed to be an escape from ill-health, poverty, disgrace, or unrequited love. And such it may be, but it is generally 'the terminal act in a complicated psychic drama' whose true motives are more likely to be guilt, aggression, or a morbid thirst for notoriety. The old legal term 'self-murder' had some wisdom in it; the vengeful nature of many suicides is plainly indicated in the spiteful tone of the 'You'll be sorry' notes left behind. Overwork is often said to be a cause of suicide, but a study conducted by the Metropolitan Life Insurance Company suggests that idleness is much more often a cause.

¹ Gould and Pyle: *Anomalies and Curiosities of Medicine*, p. 523. Dr. Caldwell's story, which they give, was given again in the *Journal of the American Medical Association* (vol. 116, January 18, 1941, p. 264) in 1941 in an article refuting this belief.

A 'typical' suicide might be conceived of as that of a gaunt young person, preferably a poet or a rejected suitor, hanging himself or taking poison in a dreary tenement on a sad November day. Statistics, however, show that more old people than young people kill themselves, that more fat people than thin people kill themselves, that more people kill themselves in May than in any other month, and that 'Gay' Vienna and 'Sunny' San Diego have the world's highest suicide rates.¹

That 'those who threaten to commit suicide seldom do' is a belief as widespread as it is erroneous and dangerous. Anyone who threatens to kill himself is a potential suicide, and few kill themselves without having first made threats and, often, faltering attempts. Dr. Edward Marten, Deputy Medical Examiner of the City of New York, says that when a man is found with his throat cut and the police must decide whether he has been murdered or has killed himself, the first thing they look for is shallow and harmless cuts—'hesitation marks,' they call them—which the suicide usually makes while screwing up his courage for the fatal slash.²

Murder, of course, has a fascinating lore all of its own. The old belief that a corpse will bleed in the presence of its murderer has pretty well faded from common consciousness, though Hawthorne used it seriously as late as 1860, and we no longer hear of heads that speak after being severed from their bodies. But plenty of other myths remain.

One of the most common, that 'murder will out,' is based on the idea that some supernatural force sees to it that

¹ For statistical evidence for the statements about suicides, see Louis I. Dublin: *To Be or Not to Be, A Study of Suicide* (New York: Harrison Smith and Robert Hass; 1933), pp. 95, 39, 289, 86, 26, 342. And see Karl A. Menninger: *Man Against Himself* (New York: Harcourt, Brace and Company; 1938), p. 17; and Maurice Levine: *Psychotherapy in Medical Practice* (New York: The Macmillan Company; 1942), pp. 160-83.

² Marten: *The Doctor Looks at Murder*, pp. 264-65.

murderers do not escape detection. But if such a force exists it has been of late singularly remiss, at least in the city of Chicago, where, according to the Chicago Crime Commission, less than one half of the more than five thousand murders committed between 1925 and 1943 have been solved.¹ Nor is Chicago's record particularly black. Many other cities—to refute a world-wide fallacy—have worse ones. Even in the United States there are twenty cities, mostly down in Dixie, that have higher rates of murder than Chicago, and New York has a higher number. Nor has any of these cities a better record of solutions than Chicago has.²

That quicklime will 'eat' a dead body is an old delusion that has brought several murderers to the noose, for, actually, it is a preservative that instead of removing the evidence keeps it fresh for the coroner's eye. Thus the fourteen victims of Mrs. Belle Gunness, of La Porte, Indiana, rhetorically known as 'the Queen of Abattoir Acres,' were found in a quite recognizable state, owing to her having gone to the trouble to bury them in quicklime. And Oscar Wilde, who poetically asserted that quicklime ate the flesh by day and the bones by night, served to refute his own assertion, for he was himself buried in quicklime, and on his exhumation two years later was found to be well preserved.³

In fiction and journalism, however, in so far as one can make that distinction, quicklime is still the great remover of evidence. When vigorous digging in a reporter's imagina-

¹ The *Chicago Daily News*, May 17, 1943, pp. 1, 3; *Time*, August 2, 1943, p. 24.

² Amram Scheinfeld: *You and Heredity* (London: Chatto and Windus).

³ For a good account of Mrs. Gunness, see Stewart Holbrook: *Murder Out Yonder* (New York: The Macmillan Company; 1941), p. 141.

Oscar Wilde's condition is described by Frank Harris: *Oscar Wilde, His Life and Confessions* (New York: The Author; 1916), p. 540, but since Harris, who was present at the exhumation, also says that Wilde's hair had grown after death, his testimony is suspect.

tion produces nothing to fill a column, there is always the possibility that quicklime ate up all the corpses. Thus when the resourceful Mr. W. A. S. Douglas, of the Paris Bureau of the *Chicago Sun*, was confronted with an empty internment camp, Fort de Romainville, deserted by the retreating Germans, he was quick to perceive that it was actually a 'death factory' for 'the martyred heroines of France.' No heroines or fragments of heroines were found, but that only added to the horror of it all: they had obviously been 'buried in quicklime.'¹

A curious belief with surprising vitality is that a murdered person's eye retains on its retina a sort of photographic image of the murderer. In *The Clansman* (the novel that was filmed as *The Birth of a Nation*) a rapist is identified by this means. Kipling employs it in his short story, 'At the End of the Passage,' in which Sahib Hummil dies of some dreadful but mysterious fright. Dr. Spurstow, a practical fellow inclined to pooh-pooh all supernatural wonders, photographs the dead man's eyes in order to find out what it was he had seen, but destroys the negatives the moment they are developed and staggers from the dark room 'very white indeed.' What the horror was we never know, for he absolutely refuses to tell, thus rescuing the author, if not the reader, from an imaginative predicament. Nor is the delusion confined to literature. Dr. LeMoyné Snyder tells of an investigation in which he participated, in which the murderer had hidden the clothes he had worn while committing the crime, lest the police recognize them from the image he was sure they would find in his victim's eyes.²

¹ The *Chicago Sun*, September 2, 1944, p. 2.

See LeMoyné Snyder: *Homicide Investigation*, p. 266, for evidence that quicklime does not dissolve bodies but 'forms a combination with fatty tissue which is resistant to insect life and to the usual putrefactive changes.'

² *Ibid.*, p. 265. A 1945 chiller-thriller movie, *Dead Man's Eyes*, had as an advertising slogan: 'Dead—but his eyes lived to condemn his killer!'

Other popular beliefs related to murder and the law are that there can be no conviction unless a body is found and identified, that a man cannot be executed on 'circumstantial evidence,' that innocent men are frequently put to death, and that if the rope breaks at a hanging or if a fuse blows at an electrocution the condemned man is entitled to go scot-free.

The first of these beliefs is based on a misunderstanding of the term *corpus delicti*, which really means the 'body' or fundamental facts of a crime. In arson, this might be a burned house, plus a suspicious smell of kerosene. In horse-stealing, it might be an empty stable. In watered milk, as Thoreau said, it might be a trout. In murder, a body with marks of violence upon it that could not have been self-inflicted is plainly a *corpus delicti*. It is a good thing for the prosecuting attorney to have, but it is not absolutely indispensable; convictions have been secured without it.¹

Obviously they have to be secured on 'circumstantial evidence.' But, contrary to popular belief, most convictions are so secured. And, what's more, it is the best of all possible evidence. There are only three kinds of evidence, says Wigmore, in his authoritative work on the subject: Testimonial, Circumstantial, and Autoptical or 'seeing it with your own eyes.' And of these the last is not available in a murder trial. Even if some eccentric murderer should insist on dragging his victim into the courthouse and shooting him in front of all the members of the Grand Jury, they would be witnesses by the time he came to trial and their evidence would be testimonial.

¹ For a definition of *corpus delicti*, see John Henry Wigmore: *Code of the Rules of Evidence in Trials at Law* (Boston: Little, Brown & Co.; 2nd edition, 1935), § 1990-91; and for proof of *corpus delicti* by Circumstantial Evidence, see § 1992.

For convictions without a body, see Edwin M. Borchard: *Convicting the Innocent* (New Haven: Yale University Press; 1932), pp. 15-22, 40-45.

And between testimonial and circumstantial evidence, the latter is the more likely to be convincing—at least to a judge or others who have had experience with testimony. For far more erroneous convictions have resulted from false testimony than from false inferences. Professor Edwin M. Borchard, of the Yale Law School, has examined, in his book *Convicting the Innocent*, the trials of sixty-five men and women who within the past generation have been wrongfully convicted. They are, he says, but random samples chosen from a great mass of such unfortunates, and he is probably right, but he is certainly not right in describing them, as he does repeatedly, as the victims of circumstantial evidence. On the basis of the records that he himself presents, they were plainly the victims of testimonial evidence. Of his sixty-five, only four were convicted on pure circumstantial evidence, and only eight others even in part on circumstantial evidence. The other fifty-three were the victims of false identifications or of perjury.

His book is indeed terrifying. But it makes circumstantial evidence look like the Rock of Ages. It is not false logic that has to be dreaded, but false witnesses. The web that may at any moment ensnare the innocent is woven not of coincidences but of lying in the prosecution, stupidity and sentimentality in juries, and prejudice in judges.

'Circumstantial evidence' is frequently used in popular literature and discussions as if it were a synonym for 'suspicion,' but it is suspicion of so strong a degree that it warrants action. The twelve good Bostonians and true, for example, who found Professor Webster of Harvard guilty of murder merely because (a) he owed Dr. Parkman money, (b) Dr. Parkman's false teeth were found in his furnace, and (c) the rest of Dr. Parkman was never found anywhere else, were proceeding on circumstantial evidence, but they could hardly be regarded as unduly suspicious. So also with the English

jury that sent Mr. George Joseph Smith to the gallows merely because he had the misfortune to suffer what he himself called the 'phenomenal coincidence' of having three of his wives drown in their baths shortly after he had persuaded them to make their wills or insure their lives in his favour.¹

Innocent people have certainly gone to jail and some have been sentenced to death, but there is no 'well-established and undisputed instance of the execution of the death penalty on an innocent person' in England or America during the past fifty or one hundred years.² Even Professor Borchard was unable to find one. And in all fairness to the judges and juries involved, it must be added that many of the false convictions were due to false confessions by the accused.

That a criminal is entitled to go free if he is actually hanged or electrocuted and yet manages, by some accident, to survive is probably a misinterpretation of the legal guarantee that a man 'shall not be twice put in jeopardy of life and limb' for the same offence. It has possibly afforded wretches a forlorn hope, but it was a fallacious one, for (though to a condemned man this would seem like quibbling) it is not the prisoner that has to be executed but the sentence, and the sentence always says that he is to be hanged by the neck or that an electric current is to be passed through his body *until he is dead*, so that until he is dead it has not been executed.

The most famous of all modern cases bearing on this issue was that of William Isaac Purvis who was sentenced to be hanged in Mississippi in 1894 for a murder which, it was subsequently proved, he did not commit. At his hanging

¹ Edmund Pearson: *Murder at Smutty Nose* (London: Heinemann).

² Edmund Pearson: *Studies in Murder* (New York: Modern Library-Random House Inc.; 1938), p. 324. The whole chapter, 'Do We Execute Innocent People?' is well worth reading.

the knot came undone and he fell to the ground unhurt. The sheriff, as was his duty, retied the knot and was proceeding to hang him up for the second time when the crowd, which had up to that time been hostile to the condemned man, became violent in his favour and threatened to attack the sheriff if the proceeding were 'unjustly' continued. Purvis was taken back to jail, pardoned, and later, when his innocence had been fully established, voted five thousand dollars by the State of Mississippi 'for services rendered.'

THE SORRY SCHEME OF THINGS

THE assurance in the first chapter of Genesis that God, after making all living things, 'saw that it was good' has proved a pitfall to those who believe that their conception of good and God's must of necessity be identical.

In earlier times when the companion assurance that man was to 'have dominion . . . over every living thing' was interpreted to mean that all living things were to serve his ends, the 'goodness' of an animal was estimated on the basis of its usefulness. By this standard domesticated animals were very good. Wild fowl, fish, and the smaller edible mammals were good. Dangerous wild animals had only the limited value of supplying pelts, and many creatures such as snakes, ants, and grasshoppers, seemed to have been designed solely for their moral value, as patterns of vice or virtue.

Heretics challenged this interpretation by pointing out that the evil some animals did greatly outweighed any good that they could possibly do; but the orthodox vindicated Providence by insisting that all things had their place in 'the great chain of being' and that much that in itself seemed evil or futile was a necessary part of a larger pattern which was good. (Saint Augustine says that wild animals exist to punish men, to test them, to exercise them, or to instruct them.)

The extent to which such ratiocinations were carried is rather startling to the modern mind which has found inscrutability to be the most prominent of the Divine

attributes. Pope's hearty assurance, for example, that man doesn't need a bear's fur to keep him warm because God has given him intelligence and skill enough to shoot the bear and skin it, fails to convey the comfort in the twentieth century that it possibly did in the eighteenth.¹ We have an uneasy suspicion that fur-bearing animals grow their skins primarily for their own convenience.

Our grandfathers, however, were free from such enervating doubts. They were able to construct a more 'meaningful' universe than we can permit ourselves to imagine, though they had to make an effort every now and then to get all the pieces of the puzzle to fit together. Thus when Captain William Scoresby, D.D., who a century ago combined theology and whaling, became agitated over the billions of jellyfish that he observed in the Greenland seas, his problem was to fit them into an anthropocentric pattern. Superficially they seemed a waste of protoplasm, but since his commercial habits of thought did not permit him to conceive of God as being wasteful, he was forced to find some other explanation of His purpose "in furnishing such a profusion of life in a region so remote from the habitations of men.'

Reflection soon made it clear. The jellyfish were put there, he decided, in order to feed the herring which feed the seal, which feed the polar bears which, if they could not get food, might come south and 'incumber regions now affording products useful for the subsistence of man.' Furthermore, the medusæ feed the whales which supply us with whale oil (wherewith we may read God's word by night as well as by day) and whalebone (whereof are made

¹ Saint Augustine: *Opera Omnia* (Paris: Gaume; 1896), vol. III, pt. I, p. 259. Alexander Pope: *An Essay on Man*, Epistle I, Section VI, lines 177-79.

Bernardin de Saint-Pierre may only have been joking when he said that the stripes on a melon were placed there by Providence to make it easier for the head of the family to cut it into equal slices.

corsets to prolong our illusions as to the divinity of the human form).¹

Thus the eye of faith saw the larger whole, and God was exculpated from the charge of being untidy. The universe was 'a most beautiful contrivance,' ingeniously arranged to keep polar bears out of our backyards and to supply us with pickled herring and sealskin coats.

Two years after Dr. Scoresby's death, however, Darwin published his dreadful book, and teleology was forced to abandon these rich surmises and to withdraw to a barren strip of land lying between biology and æsthetics. In so far as there is any popular effort today to find evidence of Design in the universe, it is confined to an admiration of the perfection with which creatures are adapted to their environments, and particularly to the fearful and wonderful economy of the human form. Amateur theologians love to contemplate the streamlining of fish, the aerodynamics of birds, the camouflage of natural colouring, and those fortunate functionings which justify faith in the supernatural 'wisdom of the body.'

But the evidence upon which they base their belief, though valid, is often fragmentary. They are like optimists in earthquakes who pick their way through ruins and over corpses to squeal with rapture over a statue or a kitten that has by chance survived the general destruction. They do not perceive that all living things are survivors and that the adaptation that has made survival possible is usually the barest minimum. In fact, where there has been more than the minimum it has always, with changing circumstances, proved fatal.

The teleologists argue backwards. Thus Sir Thomas

¹ William Scoresby: *An Account of the Arctic Regions* (Edinburgh: Constable and Co.; 1820), vol. 1, pp. 179, 546-48. In fairness to the reverend whaler, it must be said that the matter in parentheses is not his.

Browne saw Providence in the fact that the course of the sun is such as to give just the degree of heat needed by the vegetation of the various latitudes. That is, it gets very hot in the tropics, where the plants need a great deal of heat, and is cool in the arctic where the shrubs and mosses do not. But even the most vociferous arguer from Design would hardly advance that as evidence today. He would take it for granted that the vegetation had suited itself to the climate rather than the climate to the vegetation. But he might not be aware of how large a concession to mechanism he had made.

Actually there is a great deal of maladaptation in nature, and what adaptation exists is often more clumsy and ineffectual than anything but observation could lead us to believe. Biologic success, says Bradley, consists for an individual in eating and avoiding being eaten until reproduction is achieved, and for a species in the attainment of a sufficient number of individual successes in each generation to prevent extinction.¹ Yet even this modest aim is rarely achieved. There are more extinct than living species, and few members of any species reach maturity.

A striking illustration of the clumsiness of the evolutionary process is furnished by those of our physical misfortunes—some estimate them at sixty per cent of all non-infectious diseases—which may be traced, wholly or in part, to our failure to make a perfect adaptation to the upright posture.

When man reared up on his hind legs he gained the free use of his hands, which, it was formerly believed, led to the development of his brain which, it was formerly believed, was worth it. Both of the latter assumptions are now disputed, but no one denies that there are some advantages in the upright posture. There are, however, disadvantages

¹ John Hodgdon Bradley: *Patterns of Survival* (London: G. Routledge and Sons; 1939).

also, disadvantages that would be generally perceived were it not for the concept of the 'divinity' of the human form.

The backbone, in its vertical position, is subject to strains and jars and pressures which it—particularly in the intervertebral discs—is not fully adapted to sustain, and from this fact proceed a hundred ills that not all the liniment in the world can wash away. The arched foot absorbs some of the shocks, but the foot itself cannot always bear its burden and millions of flat-footed wretches shuffle along in undignified woe. The pelvis, called on 'to serve simultaneously the incompatible functions of pillar and portal,'¹ made a half-hearted compromise, spreading enough to make women knock-kneed but not enough to prevent squeezing the heads of their children as they emerge. And when we get old and fall where four-footed animals rarely fall, the pelvis breaks.

The up-ending of the circulatory system brought another train of ills, of which the most conspicuous, at least, is varicose veins.

The respiratory system suffered too. During previous æons man had developed a group of sinuses which helped to warm, moisten, and clean the air drawn into his lungs, the sinuses and lungs being so situated as to drain gravitationally in a quadrupedal posture. But now infections commonly *begin* in the upper respiratory tract and descend *into* the lungs, with the result that a majority of the human species spends a large part of its time sneezing, coughing, oozing, spitting, weeping, and wiping.

The intestines are attached by the mesenteries to the back—an excellent arrangement so long as they and the other viscera were cradled by the ribs and the abdominal muscles.

¹ Earnest Albert Hooton: *Why Men Behave Like Apes and Vice Versa* (Princeton: Princeton University Press; 1940), p. 58. And for a vigorous, brief description of man's physical shortcomings, see the same author's *Twilight of Man* (New York: G. P. Putnam's Sons; 1939), pp. 288-96.

But in the upright posture the innards have a tendency to slump down on to the pelvis, distending the belly, rupturing at the groin, and frequently impairing their own functioning.

Meanwhile the busy brain, for whose sake these discomforts are possibly endured, does everything in its power to make them worse. It devises pavements and hardwood floors to increase the shocks of walking, and invents girdles, belts, collars, garters, and pointed shoes to add to our circulatory troubles. Millions of chimneys and exhausts pollute the air of overcrowded cities to inflame the respiratory system still further. Metaphysical terrors are superimposed upon the terrestrial pains of childbirth. And the poor intestines, victims of a thousand theories, are convulsed by poisonous drugs, drenched with mineral oils, and lacerated by 'roughage' until they frequently abandon all effort to function.

Surveying these and other misfortunes, it is not astonishing that man has come to regard himself as a weakling among animals. As a matter of fact, he rather takes pride in it. It is one of his most cherished self-delusions. 'Weak in himself,' says Carlyle, in what is perhaps the classic statement of the myth, 'and of small stature, he stands on a basis, at most for the flattest-soled, of some half-square foot, insecurely enough: has to straddle out his legs, lest the very wind supplant him. Feeblest of bipeds! Three quintals are a crushing load for him; the steer of the meadow tosses him aloft like a waste rag.'¹ And in more recent times, Mr. Arthur Brisbane never tired of reminding the readers of the Hearst papers of their physical inferiority to the great apes. Intellectually, he felt, they were superior to the apes. That was, indeed, the whole point of his comparison: it is

¹ Thomas Carlyle: *Works* (London: Chapman and Hall; 1897-99), vol. 1, p. 32.

by means of his BRAIN that man, weakest of creatures, overcomes BRUTE FORCE.

The facts, however, rob man of the flattering illusion of his own feebleness, for by actual measurement he is one of the largest and most formidable of the animals. Probably ninety-nine per cent of all living things are smaller than he is. Even among the mammals he must be placed in the upper one or two per cent. Some biologists go so far as to classify him as a giant, one of those species that have outgrown efficient size and are by that very fact doomed to extinction. This may be too gloomy a view, but there can be no doubt of his comparative hugeness, and despite his weakening by assuming an upright posture, of his strength. Among living things, all seeking whom they may devour, none will attack him without provocation. There are stories of man-eating tigers, but they are usually of woman- or child-eating tigers. The rhinoceros and the Asiatic sloth bear are said to attack man deliberately, and some claim similar ferocity for the king cobra, but when out of thousands of species only three or four can be found for which such a claim can be made, they are plainly exceptions.¹

We cannot know for sure how man fared in the 'natural' state, but there is reason to believe that a young adult male, toughened by constant exercise in the open, must have been a dangerous antagonist for almost any other animal he was likely to encounter. Even modern men have killed large beasts of prey with their bare hands. Carl Akeley and Stewart Edward White, at different times, were attacked by leopards and both managed to kill their assailants by strangling them. Both men, though vigorous, were past

¹ William Howells: *Mankind So Far* (New York: Doubleday, Doran and Company, Inc.; 1944), p. 312. Vilhjalmur Stefansson: *My Life with the Eskimo* (London: G. G. Harrap). S. Suydam Cutting: 'How dangerous is the jungle?' *Natural History Magazine*, January 1941, pp. 11-18.

their youthful strength, and both were at the disadvantage of being taken by surprise. There are records of other such encounters.¹

Man is also one of the swiftest of the animals. In December 1936, Jesse Owens beat a racehorse over a hundred-yard course, and in the following September, Forrest Towns, Olympic hurdler, beat a prize cavalry horse, trained as a running jumper, in the 120-yard hurdles, using only five hurdles in order to give the horse's longer stride a fair chance.² In the middle distances the horse will win, but in the extreme distances man's superior powers of endurance again make him the victor.

The fabled eyesight of the eagle and the lynx are exaggerated. Man's stereoscopic vision is the best in nature, and he has the use of this and his other physical advantages, despite legends about elephants and whales, longer than any other of the mammals. He outlives almost everything but the tortoise.³ All in all, he is tough and tenacious, and sentimental concern about the hard time he had getting here had better be saved for the countless species he has exterminated. That he consumes the major part of his demonic energies in slaughtering his own kind must be a source of great satisfaction to the shattered remnants of creation.

¹ Carl E. Akeley: *In Brightest Africa* (London: William Heinemann), Stewart Edward White: *Lions in the Path* (New York: Doubleday, Page & Company; 1926), pp. 84-90, 33. And see W. E. Davis: *Ten Years in the Congo* (New York: Reynal and Hitchcock; 1940), p. 276.

² *Time*, September 6, 1937, p. 76.

That man is necessarily inferior, physically, to an animal was the Nazis' explanation of the defeat of Max Schmeling at the hands of Joe Louis.

³ For an estimate of man's vision, see G. H. Estabrooks: *Man the Mechanical Misfit* (New York: The Macmillan Company; 1941) p. 129, and Stefansson's *My Life with the Eskimo*.

For an estimate of man's comparative longevity, see Raymond Pearl: *The Biology of Death* (Philadelphia: Lippincott; 1922), p. 22. And see an article on the elephant which appeared in the *Baltimore Sunday Sun*, October 24, 1943, wherein we are told that an elephant begins to show signs of old age at forty and rarely lives beyond seventy-five.

Weak though he is popularly assumed to be, he is thought to be getting steadily weaker. If Adam was, as legend has it, nine hundred yards tall, the 'giants' that the Bible tells us were formerly 'in the earth' must have been mighty creatures indeed. By Goliath's time they had shrunk to mere shrimps, and humanity, obviously, had shrunk even more. And the process is thought to be continuing: 'We are not the men our fathers were!'

Morally we may not be, but in measurable size we are their betters. The investigations of Boas, Bowles, and others have established beyond question that we are stronger and healthier, on the average, than our parents. All colleges that keep records have noticed that the children of their former students are taller and heavier than their parents were. The class of 1945 at Yale, for instance, was the youngest and the tallest ever to enter that institution up to that time. The same trend has been noticed in those European countries that have required military service for several generations.¹

That the Yale class was youngest as well as tallest is interesting, because we often hear that we are prolonging immaturity, keeping our young people children beyond the age at which their fathers, in Norman Douglas's vigorous words, had zestfully warred, wed, risen to great place, and 'made provision for a fine progeny of bastards.' But this vision of 'a well-spent youth' owes more to imagination than to the census: our children are maturing physically today earlier than at any other time.²

Several theories are advanced to explain the assumed

¹ Joseph J. Thorndike, Jr.: 'Food,' *Life*, October 4, 1943, pp. 96-105. For a similar report from Harvard, see Hooton: *Twilight of Man*, p. 215—though Professor Hooton is rather inclined to regard all this growing as a sign of physical degeneracy.

² Norman Douglas: *Good-bye to Western Culture* (New York: Harper & Brothers; 1930) pp. 23-24. And see Amram Scheinfeld: *Women and Men* (New York: Harcourt, Brace and Company; 1944), p. 105.

deterioration of the race, of which the most popular is that we have been 'weakened by soft living.'

This charge is invariably brought against the poor by people in comfortable circumstances. Thus the Reverend William Harrison, a snug Elizabethan clergyman, enjoying a rich plurality of church livings, was horrified to note that the labourers of his day ate white bread and no longer slept with 'a good round log under their heads' but must needs have 'a bolster or pillow,' in consequence of which they were enfeebled. Two centuries later, to pick at random, we find the Reverend Joseph Warton, a genial dilettante who also held plural livings and sometimes placed his ease before his honour, bemoaning the 'diseaseful dainties' and 'feverish luxury' that were destroying the working people. Our fathers were repeatedly warned by Theodore Roosevelt, a child of wealth, that 'swollen, slothful ease and ignoble peace' would be their ruin, and in our own time no one has fulminated more roundly against that pampering which is 'rotting' our 'biological fibre' than Earnest Hooton, who is comfortably ensconced as a professor in our wealthiest university.¹

'Soft living' is difficult to define. If it means lolling on cushions and eating a great deal of custard, it probably would produce a degree of flabbiness, but there is no great need to worry. There are not enough cushions to go round, and very few people, even in civilized countries, get what experts consider to be the basic minimum of food. Detailed studies have shown that every rise in the standard of living is

¹ Harrison's laments are to be found in the third and twelfth chapters of his *Description of England*, prefaced to the second edition of Holinshed's *Chronicle*, 1586-87.

Warton so expresses himself in his poem 'The Enthusiast, or The Lover of Nature.' For biographical accounts of Harrison and Warton, see *The Dictionary of National Biography*.

See Roosevelt's famous speech, 'The Strenuous Life,' delivered in 1899. Hooton: *The Twilight of Man*, pp. 27, 29, 221-22, 225, 296.

accompanied by a rise in the general level of health. School-children who were 'pampered' in the city of Oslo with a daily meal consisting of a glass of milk, a piece of cheese, a rye biscuit, a piece of buttered whole-wheat bread, half an orange, and a spoonful of cod-liver oil were found to grow markedly taller than other children the same age who were not weakened by such delicacies. Sir John Boyd Orr, in a study of food, health, and income in Great Britain, found that the sons of the rich were five inches taller than the sons of the poor at the same age.¹

The deterioration of the health of the American people so dramatically revealed by the army induction tests was, of course, ascribed to luxury. 'Soft Living Between Wars makes 42 Pct. of American Manpower Unfit to Fight,' screamed the headline over the news that rejections for physical disability had increased almost thirty-three per cent.² But the headline was negated, as headlines often are, by the story under it. The causes for rejection as listed, in the order of their importance, by the Office of the Surgeon General of the United States Army, were defective eyes, mental defects, bone defects, syphilis, hernia, diseases of the cardiovascular system, and tuberculosis. And these, whatever their causes, hardly indicate soft living. Some of the syphilis, some of the heart cases, and perhaps a few of the hernias might have been the consequences of injudicious or over-strenuous revelry, but that would be about all. Major General George Lull, Deputy Surgeon General of the United States Army, told the American Medical Association that the deterioration of our natural health was in a large part due to a lack of proper medical care.³ But *that* did not make the headlines.

¹ *Life*, October 4, 1943, p. 99.

Sir John Boyd Orr: *Food, Health and Income* (London: Macmillan and Co., Limited; 1936), pp. 38, 40, 41, 48.

² *The Chicago Sun*, April 19, 1943, p. 1.

³ *Time*, June 26, 1944, p. 48.

Confronted with such facts, the alarmists usually insist that it is the *moral* fibre that is weakened by soft living. But that is equally untenable. If courage and energy and willingness to endure privation indicate moral strength, then luxury again seems to strengthen rather than to weaken. Combat pilots and submarine crews, for instance, since they all volunteered for these arduous and dangerous services, could hardly be accused of moral weakness. Yet, to a man, they were selected from among the best-fed and most carefully reared of our young men, and during their rest periods were treated with special consideration and afforded every permissible comfort.

Stefansson found that 'well brought up' young men were the best material for polar explorers *because they endured hardship* better than sailors or labouring men. They were more cheerful in adversity, willing to go hungry and to eat coarse food, better able to withstand cold and pain, and less given to complaining than those whom poverty had restricted and weakened. The same principle holds, he says, among dogs: the pampered, civilized dog will eat anything; the husky will almost starve to death before he will change a single article of diet.¹

Upon analysis, the accusation of 'soft living' often turns out to mean the doing of anything that detracts from the comfort of the accuser—such as accepting home relief, which raises the accuser's taxes, or demanding higher wages, which lowers his profits. An unusually frank statement of the problem was attributed to a Mr. Albert W. Hilliard, 'a wool merchant of Boston,' by the *Christian Science Monitor*. Mr. Hilliard, just returned from a visit to Mexico, was said by the *Monitor* to have been 'the envy of downtown Boston' because of his 'tales of eating seven-course steak

¹ Stefansson, *My Life with the Eskimo*, and *The Friendly Arctic* (London: G. G. Harrap).

dinners for 50 cents, buying land at 67 cents an acre and hiring skilled labour at 40 cents to \$1 a day.' The Mexican people, Mr. Hilliard explained, 'have not been softened by luxurious habits.'¹

But what does he mean by 'softened'? After all, who ate those dinners?

¹ The *Christian Science Monitor*, March 6, 1944, p. 9.



THE INSIDE STORY

POPULAR misconceptions concerning anatomy, physiology, and hygiene produce a great deal of confusion and discomfort. Thus about one half of all who attempt to commit suicide by shooting or stabbing themselves through the heart—from Mark Antony to Hideki Tojo—fail because they don't know where the heart is and, in consequence, shoot or stab themselves through the lung or abdomen.¹ But it may be questioned whether such errors are, properly speaking, vulgar errors. They are often just sheer ignorance—not false deductions or gross exaggerations or the products of some system of metaphysics; and until recently most of them had, and even yet many of them have, the support of fairly eminent medical authorities.

None the less, some of them are curious enough to be worth looking at.

Hair is a great breeder of error, for some reason. Hair on the chest is thought to indicate unusual strength—probably on the assumption that a man with hair on his chest is more like a gorilla—though actually the gorilla has no hair on his chest. He has hair on his back, his shoulders, his arms, his belly, and his legs, but none on his chest.²

Baldness, not hairiness, is now thought by scientists to be

¹ LeMoyne Snyder: *Homicide Investigation* (Springfield, Illinois: Charles C. Thomas; 1944), p. 81. And see Sir Thomas Browne: *Works* (Edinburgh: John Grant; 1927), vol. 2, p. 113.

² See Robert M. Yerkes and Ada W. Yerkes: *The Great Apes* (New Haven: Yale University Press; 1929), pp. 388, 392, 393. See Carl E. Akeley: *In Brightest Africa* (London: William Heinemann).

See a gorilla.

the true sign of masculinity.¹ But the news hasn't yet reached the layman, or the layman's wife, and until it does the luckless man who is losing his hair must continue to lose his time, money, patience, and comfort by trying out a score of 'remedies' which he knows in advance will prove futile.

Some urge him to shave his beard closely, so that no nourishment will be diverted from his scalp. Others would have him clip his hair short, so that what nourishment there is will be concentrated. Barbers often advise singeing the ends of the hairs after a haircut 'to keep in the vital fluid.' Some reproach him for having 'rotted' his hair by wetting it to make it lie down. Some are sure that his hat band has been too tight. And some think that he has offended a celestial Emily Post by wearing his hat indoors. All are wrong (with the possible exception of the last, whose contention can't be disproved), but they are not without their usefulness. Among them they usually manage to make the wretched man thoroughly happy when he has finally gone completely bald and so is no longer an object of their solicitude.

Commonest of all fictions about the hair is that as a result of some 'harrowing' experience it may turn white over night. The myth in its full classic splendour is given by Ludwig Bemelmans—though more, one suspects, as a contribution to humour than to physiology. In *My War with the United States* he tells the story of a tug that had drifted by mischance to the top of Niagara Falls and was held from plunging over only by a small boulder upon which it had grounded. All one foggy night the Police and Fire departments of Buffalo laboured in the rescue, while the tug scraped over the rock inch by inch; and when in the morning the members of the crew were finally taken off, only a second

¹ See an article by Dr. James B. Hamilton, of the Yale University School of Medicine, in *Science News Letter*, April 11, 1942, p. 232.

before the vessel was hurled into the abyss, every hair of every man 'had turned white from horror.'¹

Perhaps the night air has something to do with it; hair never seems to turn white over day. Or maybe it is easier to misplace the bottle of hair dye in the dark,² though such conjectures seem very flippant when one considers the innumerable 'authentic' instances that have been reported in the medical journals. Gould and Pyle have made an impressive collection of them. One is of a woodsman who awakened to find a grizzly bear standing over him and was grizzled instantly. Another is of a gambler who placed his all on the turn of a card and awoke next morn to find himself a sadder, whiter man. Most gruesome of all is the account they quote 'of hair suddenly turning grey after death.' There's a respect 'to make calamity of so long life.'³

This belief, like the head-hiding ostrich, lives on because it is so useful. It is a hall-mark of horror. It saves endless description. Don't labour to be frightful, just have someone's hair turn white over night.

The hard-pressed editors of *Time*, for instance, find it exceedingly serviceable. They assure us that Ernie Pyle's hair turned 'grey' during the African campaign, while Air

¹ Ludwig Bemelmans: *My War with the United States* (London: Victor Gollancz: 1938).

² Richard L. Sutton and Richard L. Sutton, Jr.: *Diseases of the Skin* (London: Henry Kimpton). 'Sudden, overnight blanching, reliably reported, is doubtless the result of the removal of cosmetic coloration or the application of a bleach. Physiological and anatomical facts are incompatible with the possibility of actual, nonartificial, instant blanching.' (Quoted with the kind permission of the authors and publisher.)

³ George W. Gould and Walter L. Pyle: *Anomalies and Curiosities of Medicine* (Philadelphia: W. B. Saunders; 1897), pp. 236-38, 523.

Dr. Ralph Bernstein, Professor of Dermatology in the Hahnemann Medical College and Hospital, Philadelphia, 'recalls' (in *Hospital Tidings*, October 1936, pp. 30-32) that he himself had a patient whose hair 'had entirely turned white' 'within twenty-four hours' following a great fright. But 'medical ethics' required Dr. Bernstein, when questioned, to withhold the patient's name and address and the exact date of the transformation.

Marshal Coningham's (perhaps in deference to his rank) turned 'silver grey.' Mr. C. Yates McDaniel, after watching 'the collapse of Singapore at close hand,' had turned 'almost white,' though it was confessed that the observation of earlier horrors up the Yangtze had earned him 'many a thread of silver to begin with.' As the allies advanced towards the Rhine, Pierre Laval, cowering in Berlin, was rumoured to be 'turning white,' and three years in Sing Sing was alleged to have had the same effect on Jimmie Hines.¹

Many of the stories carry their own refutation, or at least a suggestion of a more plausible explanation. Thus the very picture of Mr. McDaniel which *Time*, with admirable candour, ran with the story showed that at the time of going to press he still had a reserve of pigmentation to be lost in future horrors, and the picture of Air Marshal Coningham on the cover of the issue that described him showed only a touch of greyness at the temples. Pierre Laval was sixty-one at the time of his alleged transformation, and Jimmie Hines was sixty-seven—ages at which saints have been known to acquire what, in their cases, is described as a 'halo' or 'aureole' of white hair. And if M. Laval's bleaching was due, as was implied, to fear for his own safety, one wonders why it had not taken place three years earlier when there were a number of attempts to assassinate him.²

But great as is the concern about hair, it is secondary, as

¹ For Pyle, see *Time*, May 31, 1943, p. 44; for Coningham, August 14, 1944, cover and p. 28; for McDaniel, March 2, 1942, p. 37; for Laval, December 4, 1944, p. 38; for Hines, September 4, 1944, p. 23.

² For other instances, see Poe's 'A Descent into the Maelstrom,' Byron's 'The Prisoner of Chillon,' and Wordsworth's 'Lament of Mary Queen of Scots.' And see the *American Weekly*, April 1, 1945, p. 25, for a corpse whose white hair indicated 'the terror of the storm' in which it had drowned.

Dr. C. Simon, a French dermatologist, tells an interesting story of a young man who was so dreadfully frightened while passing a cemetery that not only did his hair turn white instantly but the hair of all five of his daughters, born subsequently, became grey prematurely ('Blanchement Rapide des Cheveux,' in *Nouvelle Pratique Dermatologique*, Paris: Masson & Cie; 1936; vol. 5, p. 840).

a cause of both interest and error, to the concern about food. Religion, habit, custom, squeamishness, fads and fancies, all affect our ideas of what is and what is not fit to eat, and almost all of them today have 'scientific' sanction.

The average man regards his own diet as sensible and all deviations from it as finicky or loathsome. When the normal American, for instance, reads that Mexicans eat fried worms, that Indians eat dogs and monkeys, that Africans eat grasshoppers, and that the Chinese and many Europeans eat coagulated blood, he simply retches and thanks God for the good old U.S.A. where wholesome food comes in bright cans and crisp boxes. As for the delicacies of antiquity—Heliogabalus' combs and wattles of cocks, Maecenas' asses' flesh, and Trimalchio's 'dugs of a pregnant sow'—it is probably just as well for his digestion that he never even heard of them.

Yet among his own simple viands are several that other people would regard with abhorrence. A third of mankind would rather die than touch his morning bacon. Biologically considered, his glass of milk is grossly indecent, and, even among those who accept milk as edible, millions prefer the milk of horses. His juicy steak would be an abomination to hundreds of millions, and many more would gladly exchange it, as a mere piece of muscle, for the liver, stomach, or heart of the same animal.

The fairly limited numbers of foods that most people commonly permit themselves is still further limited, in practice, by the widespread belief that certain foods that are good in themselves are bad when mixed. Cucumbers and ice cream were formerly thought to give the eater cholera, possibly because of some false analogy between their coldness and the subnormal temperature that characterizes that disease. Pickles-and-milk and fish-and-celery were, and by many still are, regarded as dangerous combinations. A

whole cult gravitates around the delusion that proteins and starches should not be eaten at the same meal, despite the fact that there is some protein in all food and that milk, nature's basic food, contains proteins and carbohydrates.¹

Other popular delusions about the digestive organs and their functionings are that fish is good for brain workers, that unusual hunger indicates a tapeworm, that a sudden fright cures hiccups, and that constipation causes 'auto-intoxication.'

The brain contains phosphorus and so does fish, but the phosphorus in the brain does not have to be continually replenished, and even if it did there is no proof that it would be obtained any more easily from fish than from many other foods. The belief may possibly owe something to an association of a fish diet and the clergy through the centuries during which the clergy had a monopoly of intellectual work.

The common theory of the tapeworm is that it eats so much of its victim's food that he is eternally hungry. Actually, however, a tapeworm eats very little and manifests its presence by no symptoms whatever—although many people are nauseated when they know they have one. Morbid hunger is more likely to be a symptom of diabetes.

Hiccups are spasms of the diaphragm, variously attributed to indigestion, gas on the stomach or in the intestines, alcohol, heart disease, pregnancy, pneumonia, certain nervous afflictions, and inflammation of the diaphragm itself. Extreme fright has been said to cause abortions and so it might end one of the causes, but the others are not amenable to such a remedy. The belief, however, has its devotees, and

¹ Dr. Solomon Strouse, writing on diet in *The Modern Home Medical Adviser*, edited by Dr. Morris Fishbein (1942 ed.), suggests a series of menus that combine proteins and carbohydrates.

Dr. August A. Thomen: *Doctors Don't Believe It, Why Should You?* (New York: Simon & Schuster; 1941), p. 18, says: 'If foods are digestible by themselves, they cannot form an indigestible mixture.'

almost a martyr in John Mytton of Halston, who set fire to his own nightshirt to effect a cure.¹

The annoying thing is that hiccups usually die down soon of their own accord, so that the sufferer often has to endure the triumphant 'I told you so' of the egregious ass who frightened him as well as the exasperation of the hiccups themselves.

Auto-intoxication is one of the great modern bugaboos. The theory of it, expounded over the radio with fulsome delicacy, is that the body absorbs from the clogged intestines poisons that would normally have been excreted. Many physiologists, on the other hand, are of the exact contrary opinion. They hold that poisoning from the large intestine is more likely when laxatives have moved the contents of the small intestine too quickly. The food and moisture content of the colon are then abnormally high and hence bacteria are enabled to grow with rapidity.²

One of the commonest illusions concerning diet is that certain foods have special properties to stimulate sexual desire. But aside from cantharides, which act as a vesicant and arouse sensations far too painful to be regarded as amorous by any but the morbid, it may be doubted if there is such a thing as a genuine aphrodisiac. Alcohol, it is true, often has the effect of one; but it operates not so much by increasing thoughts of love as by lessening thoughts of consequences.³

Many foods, however, have been claimed to be aphrodis-

¹ For Mytton, see *The Dictionary of National Biography*, vol. XIV, pp. 15-16 and John Timbs: *English Eccentrics and Eccentricities* (London: Chatto & Windus; 1875), p. 52.

² Walter C. Alvarez: *Nervousness, Indigestion, and Pain* (New York: Hoeber; 1943), pp. 310-13.

³ Opium has a slight aphrodisiac effect. So does potassium bromide and, of course, any diuretic. For the effect of alcohol, see Howard W. Haggard and E. M. Jellinek: *Alcohol Explored* (New York: Doubleday, Doran & Company, Inc.; 1942), p. 123.

iacs. Antiquity favoured onions, though our more squeamish times would probably regard them as definitely inhibitory. The Elizabethans ascribed the power to so many articles of diet that one suspects that in that virile but undernourished age all anyone needed was a square meal. They set especial store by potatoes, eryngoos, and tobacco, and thought so well of prunes, in this respect, that they served them as free lunches in their brothels. Modern lore follows Casanova's prescription of oysters but places equal faith in raw eggs, which are thought to be great strengtheners of virility as well.¹

Even more widespread is the belief that saltpetre is an anti-aphrodisiac and is secretly introduced into the food at colleges, prisons, and other places where amorous impulses are thought to have ungovernable force. It is safe to say that there is not a boys' school or an army camp in the country in which this myth is not entrenched. Yet as far as the camps go, physical exhaustion obviates any need for sedatives; and as far as the schools go, if saltpetre is put into the food, the prevailing temper of the young gentlemen refutes its alleged effects.

(No discussion of vulgar errors could touch on oysters without mentioning the belief that they are poisonous in the months whose names do not have an *r* in them. Before the development of refrigerated transport this belief may have had some foundation in the fact that the months without an *r* are summer months when sea food that had to be shipped inland was particularly likely to spoil. Furthermore, the summer is the spawning season of oysters, and during this season they often taste flat. But there is nothing poisonous about them.²)

¹ The Elizabethan faith in prunes and the use to which they put them is based on an oral communication from the late Professor George Lyman Kittredge.

See 'Preparing Fathers,' *Time*, November 27, 1944, p. 46.

² 'With modern methods of refrigeration and this new carbonated shucking, oysters may be eaten any month in the year.'—*Consumer's Guide*, vol. 10, No. 9, August 1944, p. 16. (A Publication of the War Food Administration, Washington, D.C.).

The belief in aphrodisiacs may be based on an unconscious desire to gratify forbidden impulses without having to accept the moral responsibility for doing so. There is a similar fascination, seemingly, in the thought of all drugs. The press plays them up sensationally and standardizes certain errors or exaggerations.

A few years ago the editors of half the popular magazines in America became addicted to marihuana—as a subject for copy—and sent their own and their magazines' circulations soaring with delicious dreams of high-school girls abandoning themselves to orgies under the influence of this subtle drug. 'Reefers' were identified as the root of half the evil then extant. The *Reader's Digest* felt that the number of 'murders, suicides, robberies and maniacal deeds' committed every year by children under the influence of marihuana could 'only be conjectured.'

They and their readers may be interested in one conjecture, that of Dr. LeMoyne Snyder, Medicolegal Director of the Michigan State Police. His conjecture, at least for the state of Michigan during the years when all such matters would have come to his attention: none. And his belief that it is 'questionable' whether or not a true addiction to the drug is often developed is supported by a study of the problem made by a special committee of doctors in New York City—though it should be stated that the conclusions of this committee were severely condemned in an editorial in the *Journal of the American Medical Association*. Still, the very existence of such writings and opinions shows that the case is not so closed as laymen might assume.¹

¹ See 'Marijuana—Assassin of Youth,' the *Reader's Digest*, February 1938, pp. 3-6; 'Menace of Marihuana,' *American Mercury*, December 1935, pp. 487-90; 'Marihuana Menaces Youth,' *Scientific American*, March 1936, pp. 150-51; 'Facts and Fancies about Marihuana,' *Literary Digest*, October 24, 1936, pp. 7-8. There were many similar articles in other publications.

For Dr. Snyder's opinion, see *Homicide Investigation*, p. 199. And see *The Marihuana Problem in the City of New York* by the Mayor's Committee on

There are a number of delusions concerning the milder drugs and poisons to which the public is addicted. Tea is commonly thought to be more healthful than coffee, though both contain approximately the same amount of caffeine, and smoking is thought to relieve tension and alcohol to act as a stimulant.

Tobacco acts first as an excitant and then as a depressant. Irritability, restlessness, impaired memory, depression of spirits, insomnia, headache, and fatigue have all been demonstrated to be the physical consequences of excessive smoking. Even two cigarettes can produce a measurable dulling of sensitivity and increase of tremor.¹

The immediate effect of alcohol is stimulating, but the general effect is sedative. The nervous system is depressed and drowsiness ensues. It seems stimulating only because the first manifestation of its depressive action is a lowering of inhibitions, with a consequent feeling of release.²

But it must be added that alcohol is not quite the villain, either, that some would have us think. Drs. Haggard and Jellinek, of the Yale University School of Medicine, after an exhaustive study have come to the conclusion that the ascription of stomach ulcers, arteriosclerosis, kidney diseases, cancer, and especially cirrhosis of the liver to alcoholism as the due penalties of wickedness is unjustified. It is their opinion that the diseases of chronic alcoholism 'are essentially nutritional disturbances.' They grant that there is an abnormally high incidence of cirrhosis of the liver among heavy drinkers, but they point out that the disease also occurs

Marihuana (Lancaster, Pa.: The Jaques Cattell Press; 1945); and 'Marihuana Problems,' the *Journal of the American Medical Association*, April 28, 1945, p. 1129.

¹ See C. L. Hull: 'The Influence of Tobacco Smoking on Mental and Motor Efficiency,' in *Psychological Monographs*, 1924, 33, No. 3. And see also W. L. Mendenhall: *Tobacco* (Cambridge: Harvard University Press; 1940); and A. H. Steinhaus and F. M. Grunderman: *Tobacco and Health* (New York: Association Press; 1941)—p. 33 in particular.

² Haggard and Jellinek: *Alcohol Explored*, pp. 104, 126, 131.

among non-drinkers and that there is 'as yet no certain knowledge' of its cause in either group. They feel that alcohol is bad for anyone who has an ulcer, but they do not believe that alcohol alone would cause an ulcer, and they found less hardening of the arteries and less cancer among chronic alcoholics than among the general population of the same age.¹ Perhaps there are, as Rabelais said, more old drunkards than old doctors.

Some of the old drunkards might attribute their longevity to the fact that they had so much alcohol in their blood that they were immune to infection, for it is widely believed that liquor is antiseptic and that the blood absorbs it in full strength. Both both beliefs are illusory: alcohol cannot be drunk or absorbed into the bloodstream in any concentration strong enough to kill germs.²

In a confused way, some such idea must be behind the belief that whisky is good for a snakebite, though actually, because it increases circulation and so spreads the venom more rapidly through the system, it is bad. Some, by extension, seem to think that 'alcohol in the blood' is an antidote for any poison, and we read, in the *New Yorker*, of a man who was bitten by a black widow spider but who was 'fortunately an alcoholic' and so 'threw off with ease a dose of venom that would probably have destroyed an abstemious man.'³

The belief that a little oil taken before drinking will prevent drunkenness is very old. Plutarch had it from Claudius, his physician. In those days it was oil of bitter almonds; now it is olive oil or mineral oil, though some recommend cream. One modern theory is that the oil spreads

¹ Haggard and Jellinek: *Alcohol Explored*, pp. 177, 106, 99, 192-93, 103.

² *Ibid.*, pp. 84, 93, 206.

³ For whisky and snakebite, see Raymond L. Ditmars: *Confessions of a Scientist* (New York: The Macmillan Company; 1936), p. 72; Morris Fishbein: *Shattering Health Superstitions* (New York: Horace Liveright; 1930), p. 55; and the *First Aid Textbook* of the American Red Cross, revised edition, 1940.

For the black-widow-spider man, see the *New Yorker*, October 7, 1944, p. 10.

an impenetrable film over the wall of the stomach—though, if this were so, any oil taken with any meal would stop all digestion. The ancient theory was that oil would spread a film over the surface of the alcohol and so prevent the fumes from rising into the ‘limbeck’ of the brain.¹

Next to the digestive and reproductive systems, the respiratory system seems the object of the greatest common concern and confusion. Most of the illusions are grouped around the common cold, which the layman usually ascribes to exposure to a low temperature. The experts, however, say that colds are caused by ‘a filterable virus’ plus the action of variable factors, including chilling. Which being interpreted means that colds are caused by whatever it is that causes colds.

Except in so far as it conduces to avoiding infection, the out-of-doors life, sleeping on porches, and so on, does nothing to ‘build up resistance’ to colds. A Gallup poll showed that farmers, as a group, ‘have slightly more colds than other groups in the population,’ and one of the most striking features of the ‘flu epidemic of 1917–18 was the high mortality among the young and healthy.²

Cold baths are more a matter of pride than of prophylaxis. They may be refreshing to the person who takes them, but they are tiring to those who have to hear him tell about them. Apart from cleanliness, hot or cold baths do not improve the health. More people have died in bathtubs than ever lived because of them.

¹ Sir Thomas Browne: *Works* (Edinburgh: John Grant; 1927), vol. I, p. 298. George Jean Nathan and H. L. Mencken: *The American Credo* (New York: Alfred A. Knopf, Inc.; 1921), Article 408. Haggard and Jellinek: *Alcohol Explored*, p. 88, say: ‘Of the common foods, milk seems to have the greatest influence in slowing absorption.’

² For the futility of an out-of-doors life in warding off colds, see Noah D. Fabricant: *The Common Cold* (Chicago, New York: The Ziff-Davis Company 1945), p. 49. For the Gallup Poll, see the *Chicago Daily News*, January 13, 1945 p. 5, and other newspapers of that date.

One of the most pathetic fallacies of sufferers from severe respiratory diseases is the widespread belief that a dry climate will 'dry up' the infection. Thousands of the tuberculous believe that if they could only get to Arizona or the Sahara their infection would magically disappear. But such hopes are doomed to disappointment. The air of the average house or flat is often drier than that of any desert, but it makes no difference, for our bodies have an elaborate mechanism to ensure that the humidity of all air entering the lungs is close to the saturation point. If a change of climate has a beneficial effect, it is through its effect on the general health or because a change of environment often makes a change of living habits easier.¹

The remedies proposed for the common cold are as numerous as they are futile. Some urge whisky, some urge lemon juice, and some a mixture of the two. 'Alkalinizing' has all the attraction of mystery and meaninglessness, and hundreds of tons of bicarbonate of soda are poured annually down a million gullets, though, fortunately for the possessors of the gullets, no amount of bicarbonate or any other substance will alkalinize the system. Honey and pine preparations, possibly because they suggest the great out of doors, have their devotees.²

The injunction to 'Feed a cold and starve a fever' leads some to eat heavily when they have a cold and others to eat sparingly. The first regard the proverb as a direct prescription, but the second feel that its true meaning is 'If you feed a cold, you will have to starve a fever later.' Both are wrong.

¹ See chapters 12 to 17, inclusive, in *Radiation and Climatic Therapy of Chronic Pulmonary Diseases*, ed. by Edgar Mayer, M.D. (Baltimore: The Williams and Wilkins Company; 1944).

² For the futility of lemon juice, whisky, bicarbonate of soda, see Fabricant: *The Common Cold*, pp. 73, 15, 53. For the impossibility of 'alkalinizing' the system, see Walter B. Cannon: *The Wisdom of the Body* (London: Kegan Paul). For the antiquity of faith in honey and pine products, see Sir Thomas Browne: *Works*, vol 1, p. 196.

A person with a cold requires no more food than he does in normal health, but illnesses accompanied by fever require extra food to build up wasted tissue.¹

Manufacturers of cosmetics have done much to strengthen the belief that we breathe through our skins, though if we did we would be suffocated by most of their products. Some oxygen is taken in through the skin and some carbon dioxide given off, but the quantity is negligible and the respiration probably goes no farther than the skin itself. There are stories of persons who have 'smothered' as a result of having their skins gilded or varnished, but hundreds have been tarred and feathered and thousands—in the war—have been coated with oil (which would have the same effect) without fatal consequences. A quaint old New England belief, related to this, was that if you held your breath the pores would be closed so that a bee or a wasp could not get his sting in and, after several vain attempts, would finally go away disgusted.²

There is something about human beings when they are trying out a health theory that would make almost anyone go away disgusted.

¹ Fabricant: *The Common Cold*, p. 49.

² For breathing through the skin, see Sutton and Sutton: *Diseases of the Skin*, p. 32.

For the baffling of the bee, see Thoreau's *Journal* for June 28, 1857 [Henry David Thoreau: *Writings* (Boston: Houghton Mifflin Company; 1906), vol. XV, p. 463].

NEVER MIND

FUNDAMENTAL to all vulgar errors in psychology is the assumption that the mind is a separate entity. Psychologists conceive of it as the final product of many functions, including reflexes, emotions, desires, and memories, the whole shaped by environment and circumstances, but to the layman it is a sort of invisible organ that controls and directs the body as a captain controls and directs a ship.

It is further assumed to be a purely human attribute ('Only man can reason') and to be immutable ('You can't change human nature'). Many believe it to be capable of communicating by non-material means with other minds and with supernatural powers. It controls the body for the body's own good and is itself regulated by some metaphysical influence.

In other words, the 'mind' is the 'soul,' and much of the confusion in popular psychology is due to an effort to make this equation while denying or ignoring the metaphysical sanctions by which the older concept was sustained.

Animals were denied souls by definition, but it is impossible to deny them reason. Proof of their intelligence is now plentiful and the opinion of scientifically trained men who have worked in the field of animal psychology is unanimous and emphatic. Yerkes says that evidence to show that the great apes reason 'is both abundant and convincing.' Loeser says that we cannot 'doubt any longer' that animals have intelligence akin to ours. They can combine the parts

of separate past experiences in order to solve an immediate problem. And in what else can reason consist?¹

This blow to our self-esteem is, however, offset to some degree by the discovery of the same researchers that man is not unique in 'vileness' either. It used to be said that reason, being capable of corruption while instinct is not, permitted man 'to sink lower than the brutes' in moral matters. But Yerkes asserts that prostitution is quite common among the great apes, being indeed, as he phrases it, 'a natural development among such highly intelligent animals.'²

The often-heard assurance that 'You can't change human nature' seems to be the 'rational' analogue of the old belief in the immortality of the soul. Even so original a thinker as President Hutchins of the University of Chicago is convinced that 'Human nature is, always has been, and always will be the same everywhere'³—though he does not reveal where he got his knowledge of the remote future.

But time and circumstances have repeatedly effected changes in group values and responses to an extent that can hardly be described as anything but changes in human nature. What could be more fundamental to human nature than love, greed, and pugnacity? Yet whole civilizations have existed without romantic love, without the desire to own more than personal belongings, and without the desire to attack their neighbours. Delight in cruelty is often said to be a part of human nature, yet it is certainly affected by custom. Until about a century ago the torturing of animals for fun was universal in Christendom—though Mohammedans and other heathen frowned upon it. A handbill

¹ Robert M. Yerkes: *Almost Human* (London: Jonathan Cape). Johann A. Looser: *Animal Behaviour* (London: Macmillan and Co., Ltd.; 1940), pp. 64, 65, 117. N. R. F. Maier and T. C. Schneirla: *Principles of Animal Psychology* (London: McGraw-Hill).

² Robert M. Yerkes: 'Conjugal Contrasts Among Chimpanzees,' *Journal of Abnormal and Social Psychology*, April 1941, pp. 175-99.

³ *Fortune*, June 1943, p. 201.

dated April 27, 1702, promises those who attend Hockley-in-the-Hole, an English pleasure spot, that evening the delightful spectacle of a bull 'with Fire-works all over him, and two or three Cats ty'd to his tail, and Dogs after them'; and if the promise failed to fill the house, it may have been because a rival establishment offered the counter-attraction of mumble-sparrow, a diversion that consisted in putting a sparrow with clipped wings in the crown of a hat while contestants, holding their hands behind their backs, attempted to bite its head off.

What is education, in fact, but a means for changing human nature? The whole point, indeed, of the very article in which Mr. Hutchins displayed his clairvoyance was that men could, through education, be made humane and just and could be taught to repress their animality.

Even the soul, though immutable, was thought to be amenable to discipline. Millions of the devout sought out and endured humiliations in the hope of thereby acquiring humility and by various other exercises, equally confused, tried to 'strengthen' their spirits; and believers in the mind hold with equal tenacity that it can be 'disciplined through study.' And while it transcends impertinence to label as a vulgar error any idea that has been endorsed by Plato *and* Woodrow Wilson, yet the conviction that 'there is no stond or impediment in the wit, but may be wrought out by fit studies' (to quote Bacon's statement of it) is refuted by common observation. Any member of a college faculty knows that scientists are no more sceptical, rhetoricians no more articulate, and logicians no more logical than other men; yet faculties go on basing curriculums on the assumption that there is a transfer of aptitude from special to general performance. In the lower schools it is often worse. The number of hours taken from the lives of American children in the past hundred years by the delusion that

memorizing increases the power of memory (to cite a glaring example) probably exceeds, in the aggregate, all the time lost in battle during the same period.¹

The soul, for all its divine nature, was thought to come sometimes under the control of malignant spirits who could thereby compel its owner to commit dreadful acts, even to the point of his own damnation. Similarly the mind is believed to be capable of being brought, through the malignant power of hypnotism, completely under the control of another person who can compel his victim to do anything merely by 'willing' it. Charlie Chaplin was accused by Miss Joan Barry's lawyer of having exercised this baleful power over his susceptible client. Barbara Hutton accused her former husband, Count Haugwitz-Reventlow, of getting \$1,200,000 from her by 'an almost hypnotic influence'—causing speculation as to the sum he might have obtained if the spell had been complete. Mr. Clyde R. Powell, a 'consulting psychologist' of Endicott, New York, confesses to have had as many as three thousand people at one time utterly helpless, unable to so much as move their hands without his consent. And while he is careful not to abuse this tremendous power—being so considerate, indeed, as to have an assistant standing behind each subject he hypnotizes to catch them the moment he says, 'Go to sleep'—other, less scrupulous hypnotists are believed to take criminal advantage of their subjects, compelling them to serve as slaves or even to acquiesce in having their own throats cut.²

¹ For confirmation, see W. C. Bagley: *The Educative Process* (New York: The Macmillan Company; 1910), pp. 203–217; R. B. Cattell: *General Psychology* (Cambridge: Sci-Art Publishers; 1941), p. 380; and Charles Fox: *Educational Psychology* (New York: Harcourt, Brace and Company; 1927), pp. 187–88.

² For the charge against Chaplin, see *Time*, January 8, 1945, p. 36.

Miss Hutton's allegation was reported in the *Chicago Sun*, July 25, 1944, p. 1.

Mr. Powell's powers were stated by himself in an interview reported in the *Chicago Daily News*, January 31, 1945, p. 10.

Yet in so far as hypnosis is understood, it does not support these and other popular illusions. It seems to be chiefly a process of suggestion, a conditioned reflex. The weak and submissive are not better subjects than the strong and intelligent. One cannot be hypnotized unaware; the subject has to take an active part in the process, and it is doubtful if any suggestion seriously detrimental to the subject would be carried out unless it happened to reinforce a latent self-destructive impulse.¹

That the mind, like the soul, is subject to some supernatural justice is embodied in the principle of compensation. This principle, dear to the popular heart, holds that every handicap is offset by an equivalent advantage and every superiority humbled by some shortcoming. Silent men are universally held to be deep thinkers. The blind are thought to develop a 'sixth' sense of guidance. Geniuses are 'known' to be practically feeble-minded outside their special fields. And precocious children are believed to turn out to be stupid adults or to die prematurely.

The wisdom of silent men is beyond proof, though proverbial in every language. What basis it has seems to consist in our assumption that anyone who has not spoken to the contrary must agree with us and is, therefore, a fellow of infinite wisdom.

Miss Nell Horner, of Tulsa, Oklahoma, sued Mrs. Fay Smith of that city, for \$10,000 on the charge that Mrs. Smith had kept her in servitude for five years 'by means of hypnotism.'—*Chicago Daily News*, March 31, 1944, p. 9.

Miss Kate Bender, of Independence, Kansas, was thought to have 'hypnotized' her guests in order to make it easier for her brother to kill them. See Edmund Pearson: *Murder at Smutty Nose* (London: William Heinemann).

There is a still more gruesome belief that certain persons are psychic vampires, able to 'extract the strength' from others, to drain them of vital energy without any direct physical contact. See a short story, 'The Wager,' by Fulton Oursler, in *Good Housekeeping*, July 1944, pp. 44, 61, 62, 64, 66, where the myth is said to be 'a fact . . . recorded in medical literature.'

¹ See Andrew Salter: *What is Hypnosis?* (New York: Richard R. Smith; 1944), pp. 5, 13, 15, 17, 48.

That 'the great scheme of Heaven's merciful consideration for the afflicted' includes special gifts for the blind has not been obvious to those who have examined the question without preconceptions. In so far as repeated and careful experiments can prove, the blind seem merely to pay more attention to echoes, air currents, and the modifications of temperature caused by the proximity of large objects than do those who have their sight.¹

That the supernatural powers with which they are thought to be endowed are sometimes described as a 'sixth' sense reflects another vulgar error, the common assumption that there are normally five. How many senses there are is a matter of definition. A case can be made for only one, the sense of touch, but once that has been divided into sight, hearing, taste, and so on, modern psychologists do not stop at five. Some think there may be as many as thirteen, finding some of the additional ones grouped together, in popular conception, as 'touch,' a composite that includes a sense of heat, a sense of pressure or resistance, and a sense of pain. Then there are senses of position, movement, and balance, every bit as important to the functioning of the body as the better-known senses of sight and hearing. And there is a muscular sense, and some internal sense that transmits such 'feelings' as hunger and thirst.

The thought of the general ineptitude of the man of genius is no doubt a consolation to those lacking genius, but it is wholly a figment of their imaginations. For the fact is that people talented in one field are usually talented in other fields as well and above the average in all. Einstein is a skilful violinist. Somerset Maugham paints very well. Winston

¹ The quotation is from Dickens's *American Notes*, Chapter 3. He is speaking of the blind. For refutation of its assumptions, see R. S. Woodworth: *Psychology* (London: Methuen and Co.), Joseph Jastrow: *Fact and Fable in Psychology* (London: Macmillan and Company; 1901), and Francis Galton: *Inquiries into Human Faculty* (Everyman's Library; 1919), p. 21.

Churchill is a successful writer, a competent bricklayer, an amateur artist, and has some standing as a statesman. Such a list could be continued indefinitely.

No one has ever demonstrated that there are 'negative correlations among desirable abilities.' Thus the widespread belief that those who learn slowly retain more of what they learn than those who learn fast has also been thoroughly disproved.¹

That precocious children come to no good is widely held, probably because unprecocious children are widely distributed and mother love is greater than mother logic. There is no lack of 'evidence' to support it, for the failure of a prodigy is always news. Thus a great deal was made of the obscure death of William Sidis, once one of the most famous of all precocious children. At four he had written essays in both English and French. At five he had composed a treatise on anatomy. He had been ready for college at nine and, though not admitted until he was eleven, had graduated from Harvard *cum laude* at sixteen; but, to the great satisfaction of vulgar expectation, he had 'never amounted to anything.' He was 'queer.' He shunned publicity, espoused communism, made no money, and diverted himself by collecting trolley transfers.²

Psychologists were interested in him, however, because his failure was exceptional; for most precocious children turn out well and do far better than the average. How much better is evidenced by the immense number of distinguished men who were child prodigies. John Stuart Mill began to learn Greek when he was three. Shelley and Pope wrote excellent poetry in their early 'teens. Clerk Maxwell contributed papers to the Royal Society before he was twenty, and

¹ See C. Spearman: *The Abilities of Man* (London: Macmillan and Company; 1932); and—by the same author—*Human Nature and the Social Order* (New York: The Macmillan Company; 1940), pp. 266–67.

² *Time*, July 31, 1944, pp. 60–62; the *New Yorker*, August 14, 1937, pp. 22–26.

Einstein was only eighteen when he first proposed his theory of relativity. In music great abilities have been shown even earlier. Mozart was playing and composing at four, and the compositions of Handel's eleventh year would not be discreditable to any man. Amram Scheinfeld conducted an inquiry among thirty-six outstanding instrumental musicians (vocalists, naturally, cannot demonstrate their talents before puberty) and found that the average age at which they had first shown talent was under five and that the average age of their serious professional debut was thirteen.¹

Nor do the talented pay for this by an early death. Keats and Chatterton and Schubert and Mozart are frequently mentioned as 'typical' geniuses in that they died young. But they were exceptional; most men of genius have enjoyed more vigorous health and have lived longer than the average of their contemporaries.²

One of the most cherished articles of popular faith is the belief that women are intellectually inferior to men; and here again the 'mind' reflects the 'soul,' for the souls of women were generally believed to be inferior articles. Women were thought to be morally weaker, less discreet, and more easily tempted than men.³

In the comparative freedom of the eighteenth century, however, some very vigorous and able females appeared in

¹ For Mill, Shelley, Pope, Maxwell, Einstein, Mozart, and Handel, see the *Encyclopædia Britannica*, 14th edition.

Amram Scheinfeld: *You and Heredity* (London: Chatto and Windus).

² Keats died of tuberculosis, Chatterton by suicide, Schubert of typhus or typhoid, Mozart of typhus, typhoid, or—as he believed—of poison. None of these causes would necessarily indicate an inherent frailty. See the results of an examination of the life span of more than two thousand musicians, philosophers, and poets, published by Chester Alexander in *School and Society*, April 15, 1944, pp. 265-66.

³ 'The female sex is in some respects inferior to the male sex, both as regards body and soul.'—The *Catholic Encyclopedia*, vol. 15, p. 687.

'As regards the individual nature, woman is defective and misbegotten.'—St. Thomas Aquinas: *Summa Theologica*, Question XCII, Article 1, Reply Obj. 1.

popular literature. Not as heroines, of course—*they* were still expected to be frail and helpless—but as robust minor characters. But a century later, when reaction had established the ideal of ‘womanliness,’ these vital trulls and hoydens had been exorcised, and more tractable creatures—such as Ben Bolt’s ‘Sweet Alice,’ who ‘wept with delight when you gave her a smile and trembled with fear at your frown’—had been set up in their places.

Tennyson, who was not made laureate of Victorian England for nothing, has a scene, in the 97th section of *In Memoriam*, in which he depicts what he no doubt conceived to be a typical evening at home of the ideal couple. The husband is a tremendous intellectual, ‘rapt in matters dark and deep,’ threading ‘the labyrinth of the mind,’ and reading ‘the secret of the star,’ while the little woman, unable to comprehend phrenology or astrology or whatever it is he is absorbed in, finds ‘her bliss’ in contemplating ‘a withered violet’ which he had given her years before.

For him she plays, to him she sings
Of early faith and plighted vows;
She knows but matters of the house,
And he, he knows a thousand things.

Her faith is fixt and cannot move,
She darkly feels him great and wise,
She dwells on him with faithful eyes,
‘I cannot understand: I love.’

Her duty was, plainly, to admire, inspire, and retire.

Ruskin, more radical, granted women to be men’s equals, but insisted that their spheres were different: man’s sphere was ‘self-development’ and woman’s ‘self-renunciation.’ He championed the education of women because he felt that women must be ‘enabled to understand the work of men.’ Cooking and needlework were indispensable, of course, but

he firmly maintained that a girl should also be taught at least enough of languages and science to permit her 'to sympathize in her husband's pleasures and in those of his best friends.' Ruskin obviously got around a little more than Tennyson and realized that a withered violet introduced too persistently into the conversation might have a blighting influence, but he shared Tennyson's fundamental assumption that the woman's role was a supplementary one.

Such Olympian assurance of woman's innate inferiority is no longer tenable, but the pleasure that it afforded at least half of mankind was too great to be relinquished without a struggle, and the retreating male has fallen back on 'science' as his present line of defence. Women, we are now told, have smaller brains than men. They 'can't stand the strain of life' so well as men. They become hysterical and are easily 'rattled,' especially by mechanical devices, for which they have very little 'aptitude.' They are particularly inept at driving a motor car.

Certain compensations are allowed them, of course: they have 'intuition' and they are 'purer,' but neither compensation amounts to much, because intuition is definitely conceived of as a lower power than the reason which it stands in stead of, and their purity, by a twist of masculine logic, is one of the chief justifications for denying them freedom of action, or for 'protecting' them, as it is more generally described.

Women, be it said first, being anatomically smaller than men, do have smaller brains than men. Relative to their size, however, they have slightly larger brains. But since the size of the brain, absolute or relative, has never been correlated with intelligence, such measurements prove nothing either way. Their lack of mechanical aptitude is undeniable, but the success of hundreds of thousands of women in factories in war time has shown that it is not innate. Given the oppor-

tunity to learn, they seem to do as well as men on all tasks but those requiring great physical strength.

And rather than 'going to pieces' under strain, they seem to bear up much better than men. At close, exacting, and monotonous work, the sort that 'drives you nuts,' they have shown much greater stability. The world over, wherever statistics have been compiled, more than three times as many men as women commit suicide. Stomach ulcers and stuttering—both now thought to be to some extent reflections of a bad nervous condition—are four to five times as common among men as among women. During the heavy bombing of London in 1940 many more men than women suffered from shock. A third more men than women die of diseases of the nervous system. There are more men than women in our insane asylums, and they go there earlier.¹

In matters of courtesy, such as sharing the road, not parking double, and signalling turns, American women may be worse drivers than American men—if that is possible; but so far as skill in driving may be judged by fatalities ensuing, they seem to be about twice as good as men. Surveys made in Pennsylvania, Connecticut, and the District of Columbia found that men were responsible for two fatal accidents, per driver, for every one that women were responsible for.²

That women are 'purer' than men, that 'in the thoughts

¹ For the higher rate of suicide among men, see Louis I. Dublin: *To Be or Not to Be, A Study of Suicide* (New York: Harrison Smith and Robert Haas; 1933), pp. 45, 50. Dr. Dublin's conclusions are supported by the report of the U.S. Bureau of Vital Statistics, 1940.

For women's success at exacting work, see 'Sixty Women Inspect Gauges,' the *New York Times*, April 23, 1942, p. 20.

For ulcers and stuttering, see Amram Scheinfeld: *Women and Men* (New York: Harcourt, Brace and Company; 1944), pp. 68, 176-77.

For the effects of bombing on men and women, see R. D. Gillespie: *Psychological Effects of War on Citizens and Soldiers* (London: Chapman and Hall).

For men and women in mental institutions, see Scheinfeld: *Women and Men*, p. 170.

² The survey in Pennsylvania was made in 1938 by the Keystone Automobile Club. The Connecticut and Washington surveys were made in 1927.

and desires of that sex' (to use the stately diction of a recent report of a special Commission appointed by the Archbishop of Canterbury) 'the natural is more easily made subordinate to the supernatural, the carnal to the spiritual than is the case with men,' is widely held. But it is hard to see how it could be demonstrated. The commission unfortunately failed to describe the experiments which brought them to their conclusion, so that for others it remains a matter of conjecture.

Two facts, however, justify a certain amount of scepticism. One is that it is a fairly recent belief, the weight of opinion through the ages being that women were more 'impure' than men. (In the majority of our states prostitution is still legally defined as the act of a female.) And the other is that it is a suspiciously convenient belief for those who wish to justify a double standard, whether in morality or economics. Thus the Commissioners just quoted, being clergymen and so faced with economic competition if women were to be admitted to the ministry, opposed their admission *on the grounds of their greater purity*. 'The ministrations of a male priesthood,' they argued, 'do not normally arouse that side of female human nature which should be quiescent during the times of the adoration of almighty God.' Whereas, they regretted to say, 'it would be impossible for the male members of the average Anglican congregation to be present at a service at which a woman ministered without becoming unduly conscious of her sex.'¹ Of course Quakers have had female ministers for centuries and their meetings are not particularly distinguished for libidinousness, but this may only mean that Quakers are less virile than Anglicans.

Especially dear to amateur psychologists of pulpit and

¹ From *Women and the Ministry, Some Considerations on the Report of the Archbishop's Commission on the Ministry of Women* (1936), p. 24, as quoted by Virginia Woolf: *Three Guineas* (London: The Hogarth Press; 1938), p. 245.

microphone is the belief that 'the complexity of modern life' is endangering our sanity, and in their shrill warnings there is more than an echo of warnings that used formerly to be issued for the benefit of the soul. 'God hath made man upright,' said the Preacher; 'but they have sought out many inventions.' And by 'inventions,' declared the Reverend Alexander Cruden, the Preacher meant 'New ways of making one's self more wise and happy than God has made him.'¹

The difficulty, of course, is to decide at just what point God intended us to stop. Those who believe that the Mix-master and the motor car are too much for us seem to think that the bowl and the buggy that preceded them were divinely ordained; whereas they, too, were once inventions. Peter Fleming tells us that in his wanderings through Tartary nothing among his equipment astonished the Mongols so much as his gloves, which they regarded as 'ingenious but effete,' and the value of whose improvement over the naked hand God gave us they very much doubted.²

To modern prophets of doom the internal-combustion engine often seems to mark the limits of our tolerance. Before that, they appear to think, all was well. 'To civilize is to eliminate,' states a scientific writer in a recent work; and he proceeds to illustrate by saying that if one of our ancestors, travelling by oxcart, relaxed for a moment, no harm was done, but that a similar relaxation by an aeroplane pilot would probably be calamitous.³

In other words, we have created an unnatural (sinful) world which is destroying our minds (souls). Our gadgets

¹ Ecclesiastes, vii, 29. Alexander Cruden: *A Complete Concordance to the Holy Scriptures* (London: F. C. and J. Rivington; 1810; 6th edition). See, under 'Inventions,' a reference to this passage.

² Peter Fleming: *News from Tartary* (London: Jonathan Cape).

³ G. H. Estabrooks: *Man the Mechanical Misfit* (New York: The Macmillan Company; 1941), p. 2.

have us cornered and are closing in for the kill (our sins have found us out).

The weak spot in most of these warnings, however, is their fictionalizing of the past. One is tempted to suspect, for instance, that the writer just quoted has never ridden in a trap behind a skittish two-year-old. Or, for that matter, in an oxcart. Not all oxen are patient; many are swift and violent, full of brooding resentment and murderous thoughts such as never entered an aeroplane's mind. Horse-flies, to which aeroplanes are notoriously indifferent, can move an ox or a horse to unexpected and disastrous violence. Men are killed by motor cars and aeroplanes, it is true, but per mile ridden it is likely that more have been killed by horses. As recently as 1921-23 the mortality among horse drivers in England and Wales was more than sixty per cent higher than the mortality among motor-vehicle drivers.¹

And even if our ancestor in his putative oxcart did have a comparatively relaxed time of it, *his* ancestor, swinging from branch to branch, lived a life fuller of split-second decisions, millimetre co-ordinations, and imminent destruction than an aviator could dream of. Except for trapeze artists (who, after all, form a negligible fraction of the population), we are in a state of torpor compared with our simian forebears. Yet they survived, or we wouldn't be here to wring our hands.

The fallacy of gadget-gloom is that it assumes that a complex device is complicated to manipulate; whereas the reverse is nearer the truth. An alarm clock, for all its cogs and wheels, is easier to read than a sundial. A harness is a simple device compared with an electric starter, but hitching a horse is more difficult than stepping on a starter. A gyrocompass, once installed, is easier to operate than a tiller.

One element in the complexity-of-modern-life theory is

¹ J. B. S. Haldane: *Science and Human Life* (New York: Harper & Brothers; 1933), p. 213—where the government statistics are quoted.

self-flattery. We love to think that we bear upon our shoulders a load that would have ruptured Atlas. 'It is doubtful,' says a modern writer, 'if any Roman emperor needed the executive ability required to run General Electric'¹—a statement which, however flattering to our executives, is in actuality more doubtful than the doubt it poses. Of course a Roman emperor couldn't operate a comptometer or even a typewriter, but most modern executives can't either. He probably could operate an abacus, though, and it is doubtful if many executives of General Electric could do that. All that any executive can do is to make decisions and accept the responsibility for them, and the Praetorian Guard was somewhat stricter than the average Board of Directors when it came to the Annual Report. Very few Roman Emperors retired on a pension after making a serious mistake.

To ascribe the increase in mental and nervous disorders to our inability to cope with mechanical contraptions is to evade a serious problem in a dangerous way. Neuroses, which do seem to be increasing among us, result from frustrations rather than from complications, so that it is the emotional rather than the mechanical situation that calls for correction.

Animals have been driven mad in laboratories, but not by being made to take unusual risks or by being compelled to operate complicated mechanisms. Their neuroses have been induced by training them to respond to certain signals and then altering the signals on them, so that when they did what they had been taught was 'right' they were punished instead of being rewarded.²

Mice and men are alike in this respect, and modern society sometimes looks as if it were deliberately designed by some fiendish experimenter in order to drive us insane. We are brought up to expect rewards for certain kinds of be-

¹ Estabrooks: *Man the Mechanical Misfit*, p. 232.

² See 'Catatonic Cats,' *Time*, June 8, 1942, pp. 54-55.

haviour and then thrown into a world in which none of the signals works. We are taught as children to be kind, self-sacrificing, and helpful, never to be greedy or aggressive. Then we must live in a ruthlessly competitive economy. We are taught to be honest, in preparation for a world in which honesty is often penalized and dishonesty, in a thousand forms, is often rewarded. Our ambition is stimulated and we are assured of success if we will only 'apply ourselves,' when actually, by the very nature of things, nine out of ten must be disappointed, and chance carries as much weight as merit.

The result is mass frustration and despair. Only the stoical and the cynical can preserve a measure of stability; yet stoicism is the wisdom of madness and cynicism the madness of wisdom. So none escapes.

THE SKIN GAME

THE danger latent in all vulgar errors finds its most dramatic illustration in 'race,' the belief that there are definite correlations between certain physical features and innate capacities, intelligence, and 'character.'

It is corollary to the even wider belief that the qualities of the mind are indicated in the conformations of the body. High brows and low brows are thought to indicate mental capacity. Unimaginative and unobservant authors speak continually of a 'cruel' mouth, a 'weak' chin, a 'patrician' nose, and so on, as if these significances were beyond question, though in reality there is nothing more to support them than verbal parallels. A receding chin suggests a receding character and a protruding jaw an aggressive character, despite the fact that the most famous protruding jaw in history, that of the Hapsburgs, continued for centuries to distinguish a particularly weak and foolish family.

It would be absurd, of course, to insist that there is no correlation between appearance and character, but the connections are so minute and varied, so complex and delicate, so contingent upon custom, dress, and manners—for there are styles in expressions, just as there are in clothes—that no directions for establishing them can be laid down.

A misleading element in the situation is that men often play the role popularly assigned to them and do their best to resemble the common conception of that role. Lincoln's rugged backwoodsiness, Theodore Roosevelt's buoyancy, and Coolidge's 'silence' (his official pronouncements were

voluminous) are supreme examples of an art that shows itself in lesser statesmen in the flowing 'mane' of hair, the string tie, the broad-brimmed hat, and the black frock coat.

Nor are politicians the only actors on this great stage of fools. Before the publication of *Mrs. Warren's Profession* had established him as a devil incarnate, Mr. George Bernard Shaw, as a few early photographs show, was far from being a sinister figure. His hair, parted in the middle, was plastered flat above a commonplace, beardless face, adorned with ordinary, functional eyebrows. But with the coming of remunerative ill-fame he strove to justify his reputation, grew a forked beard, brushed his hair into diabolical horns, and leered out from all pictures a happy Mephistopheles. The public, responding to his efforts, found ever new wickedness in his merry commonplaces and fresh confirmation of their opinions in the new face which he had assumed to oblige them. Meanwhile his bank account became tremendous.

G. K. Chesterton, John Barrymore, W. C. Fields, and some of our military commanders are other examples, out of hundreds of thousands, of men who have striven, and not unsuccessfully, to play themselves. Their reputations have been their reward, and no lover of fine acting can begrudge them their rich returns. But, as in any art or profession, there are millions who, through lack of ability or just bad luck, work as hard as the great masters but get very little out of it. Fat people try earnestly to be comic. Dwarfs exaggerate their littleness and giants their bigness. And—pathetic and ominous—Negroes 'play the nigger' lest they disappoint the white spectators at their eternal minstrel show.¹

Many tests have been devised to determine whether race

¹ For illustrations of Negroes 'playing nigger' to placate the whites, see Richard Wright: *Black Boy* (London: Victor Gollancz).

and intelligence can be correlated, and those who believe that they can, and that the white race is intellectually superior to all other races, have seized with triumph upon those results that support their belief, while rejecting with indignation those that do not. Thus much has been made of the fact that Negro children throughout America have come out lower in intelligence tests than white children, but the fact that Negro children in certain sections came out higher than white children in other sections has been discreetly ignored.

It was probably a part of ignoring exactly the same phenomenon among adults that led Representative Durham's committee, as has been said, to take such a startling interest in Adam's navel. For *The Races of Mankind* showed that while white soldiers as a whole did better in the Army intelligence tests than black soldiers, literate Negroes from some Northern states did better than literate whites from many Southern states. Literate Negroes from Ohio, for example, achieved a higher median score than the literate whites from eight Southern states.

It could be insisted, of course, that since Northern whites did better than Northern Negroes and Southern whites did better than Southern Negroes, white superiority was clearly demonstrated. But those who so insist will find themselves in a dilemma. For the Northern whites did better than the Southern whites, so that if the tests demonstrate anything they show that either Southern whites are intellectually inferior to Northern whites *and* Northern blacks, or that a more favourable environment improves intelligence. The first of these alternatives would be unthinkable to a Southern racist, and the second would be unacceptable. For the present inferior environment of the Negro (in both North and South) is justified on the assumption of his innate inferiority. Once you grant that a higher living level produces

a higher intelligence, you can no longer justify a low level on the basis of low intelligence.

What the Army tests seem really to establish is not that this race is more intelligent than that, or that this section is more intelligent than that, but that poverty is reflected in the intelligence quotient of a whole people. The correlation established is not between pigmentation and intelligence, but between diet, educational facilities, housing, and the general economic situation, and intelligence. Southern whites have, indeed, a grievance, and so have Southern Negroes. But it is a common grievance that can be remedied only by concerted action.

The problem transcends state and even national boundaries. The myth of race is the greatest single obstacle to world peace today. It is ridiculous to expect the non-white four-fifths of mankind to co-operate in establishing the dominance of the white fifth. Any world state conceived within the limitations of the notion of white superiority is bound to be a helot state in which the majority of humanity is to be kept in subjection by force and fraud. And that means endless war. Unceasing vigilance is as much the price of tyranny as of freedom.

How did this situation come into being? How did the word 'race' acquire such sinister force? On its first appearance, in the sixteenth century, it was harmless enough, signifying the children of a common parent, or, by extension, a whole generation. Then the zoologists took it over to describe local varieties of animals belonging to the same species, a usage that was easily transferred to men when in the early nineteenth century it began to be apparent that man was also an animal.

It was the great intellectual struggle that preceded the physical struggle over slavery, however, that gave it its full modern meaning. For fourscore and seven years after the

American colonists had declared it 'to be self-evident that all men are created equal,' they continued to hold several millions of their fellows in chattel slavery, an anomaly that did not escape the jibes of their enemies or the reproaches of their own consciences. Since all paid lip-service to democracy and equality, the advocates of slavery had to find some justification for their paradoxical position. And this justification was found in the theory of race. 'All men,' they said, did not include Negroes, who were not, properly speaking, men at all, but a sub-species of mankind, mentally and morally inferior to the whites. Nothing could be done for them because they were uneducable; and, lest to save cranks from wasting their time, most of the southern states made it a penal offence to try to educate them.

The codifying of the idea of race into a definite philosophy, however, was accomplished by a European, Count Joseph Arthur de Gobineau (1816-82), a reactionary minor writer of the Second Empire, who, to support his own aristocratic pretensions, attacked the philosophy of the French revolution and declared the brotherhood of man to be a vain and empty dream because it was based upon the fallacy of human equality. There were, he insisted, innate differences of talent and worth among men which could be definitely correlated with the colour of the skin, the shape of the hair, and other physical characteristics. The white race was supreme and differed from the others not only in degree but actually in kind. It alone was capable of creating culture. But it possessed this power only so long as it remained pure, and at the time of his first going to press (1853) it was far from pure. Therefore all creative effort—save his own—was at a standstill.

The greatest and most immediate duty of the white race was thus, plainly, to purge itself at once of all inferior

strains. That being done, it would 'naturally' rule the world.¹

In Germany, where the problem was largely theoretical and hence more open to literary influence, Gobineau had a vast following, especially since he had crowned the Germans, even then suffering from a national inferiority complex, as 'the master race.' Delighted with such perspicacity, the Herrenvolk founded Gobineau societies all over the land to spread the good news of their own superiority. And in 1899 their pleasure was increased to rapture, if not to mania, by the publication of Houston Stewart Chamberlain's *The Foundations of the Nineteenth Century*, a work that carried Gobineau's flights of fancy clear out beyond the gravitational pull of sanity.

Chamberlain, confusing linguistics and genetics, exalted the 'Aryans,' and included as Aryans all who were, in his opinion, exalted. Gobineau had feared the debasing of the whites by Negro blood. Chamberlain perceived that the most insidious means of this debasement was the Jews, who were particularly dangerous because they couldn't be distinguished from anybody else. He did not invent anti-Semitism, but by giving it a 'scientific' sanction he made it 'modern' and respectable.

His book was tremendously popular. The 'Kaiser, who as master of the master race had styled himself the 'All-Highest,' announced that it was his favourite reading. Hitler didn't have to; *Mein Kampf* showed it all too plainly. Indeed, if we accept Friedelind Wagner's statement that the young Hitler was in and out of the Wagner house all the time, he may well

¹ The conception of the innate superiority of the white peoples is probably unconsciously affected by the irrational association of white with goodness and black with evil. Actually 'whites' are no more white than 'blacks' are black or 'red men' red or 'yellow men' yellow. A truly white person would be a ghastly spectacle, and even to be pale is now a reproach when wealth and leisure are identified with the ruddiness and tan that come from being out of doors. Among themselves, by the way, Negroes refer to whites as 'pinks.'

have been personally acquainted with Chamberlain, since Chamberlain was Wagner's son-in-law.

The Jews, of course, had been persecuted in Europe for many centuries, but the grounds for the persecution had been social or cultural. They were reproached for having killed Christ. They were accused of murdering children in order to use their blood in evil rites. They were infidels, and so without the pale of decency. They were usurers, open sinners under the Church's ban. They wore strange clothes. They lived apart. And in their hearts, it was known, they thought themselves better than other people. But no one believed that they were innately different. Shylock might be a monster, but Lorenzo was not thought to sully noble blood by marrying his daughter, once she had been properly baptized.

Before the Jews the Christians had been scapegoats. 'If the Tiber rose to the walls of the city,' says Tertullian, 'if the inundation of the Nile failed to give fields enough water, if the heavens did not send rain, if an earthquake occurred, if famine threatened, if pestilence raged, the cry resounded: "Throw the Christians to the lions!"'¹

But in the older persecutions there was at least a twisted rationale: the Christians to the Romans, and the Jews to the Christians, represented people who by their impiety invited the attack of vengeful and indiscriminating gods. They endangered the common safety; their extirpation was an act of public sanitation.

But the idea that maltreatment is justified because the maltreated are biologically different, because they constitute

¹ In the late nineteenth century the zoologists were scapegoats. When in 1894 the spire of St. Mary's fell in Shrewsbury, severely damaging the church, the Reverend Mr. Poyntz, the rector, preached a special sermon, saying that it was thrown down because the people were organizing a memorial to Darwin, a Shrewsbury man. [See *Further Extracts from the Note-books of Samuel Butler* (London: Jonathan Cape; 1934), p. 302.]

a sub-species of humanity, is a product of modern thinking. Or rather, as John Stuart Mill pointed out when it first began, it is a product of the deliberate avoidance of thought. 'Of all the vulgar modes of escaping from the consideration of social and moral influences on the human mind,' he wrote, 'the most vulgar is that of attributing the diversities of conduct and character to inherent natural differences.'

'Students' of the problem, however, like most students of most problems, simply took the basic assumption for granted. Their task, as they saw it, was not to question the validity of the concept of race, but to classify the races—or, more accurately, to decide the exact place, in a scale descending from the whites, in which each of the lesser breeds belonged. The chief guiding trait was the degree of pigmentation of the skin, and the most prized value was intelligence, which was believed to stand in inverse proportion to colour.

Next to intelligence and often taking precedence over it was 'character,' and the white race was felt to be so pre-eminently graced with this attribute that it was for the good of the whole world for it to dominate, if not indeed to exterminate, the rest of mankind. 'It is a false view of human solidarity, a weak humanitarianism, not a true humanism,' warned as sober a man as Karl Pearson, 'which regrets that a capable and stalwart race of white men should replace a dark-skinned tribe which can neither utilize its land for the full benefit of mankind, nor contribute its quota to the common stock of human knowledge.'¹

'Replace' was probably not, of course, meant literally. In making this contribution to the common stock of human knowledge Professor Pearson did not mean, it is to be assumed, that the capable and stalwart whites should go out and work in the fields for the full benefit of mankind, but

¹ Karl Pearson: *The Grammar of Science* (London: 2nd ed., 1900; Revised reprint; Everyman's Library; New York: E. P. Dutton; 1937), p. 310.

simply that they should see to it that the blacks went out and worked to this laudable end.

Sometimes this might require the use of force, for the dark-skinned tribes do not always recognize true humanism when they see it. But often (with the machine guns standing by just in case of emergency) sheer superiority of character alone would suffice. Thus Mr. Cyril Robinson, of Winchester College, assured young empire builders in 1928 that their task would be 'greatly simplified by the extraordinary veneration and respect which the European's superior force of character inspires.' For 'the Oriental Mind,' he explained, 'though versed itself in every form of sliminess and deceit, is curiously appreciative of fair dealing and honesty in others.'

He does not claim that the lesser breeds are uneducable. On the contrary, and most unfortunately, 'the Indian, when he learns, can learn apace,' but, 'unhappily, it is too often the man of shallow character who shows the greatest aptitude for learning.' The Hindus have brains, but this only increases the need for white control, for they are 'sadly deficient in moral stamina.' Inflated with facile learning, excited by the 'catchwords of the West—nationality, democracy, and so forth,' they become madly ambitious and desire 'promotion to administrative posts.' But owing to their lack of character they naturally cannot be promoted, and so ferment in discontent, until nothing 'short of complete freedom [will] content their fevered fancy.'¹

Such are the thoughts of savants. But the ordinary man would find them far too subtle and wordy. His chief argument in favour of white superiority is the difference in the present cultural levels of the whites and the non-whites. If

¹ This bird's-eye view of the Indian Question in a nutshell is taken from pp. 622, 623, and 632 of *England, A History of British Progress*, a textbook published, in New York, by Crowell in 1928 and used in preparatory schools on both sides of the Atlantic.

the yellow and brown and black peoples are our equals, he will triumphantly demand, why didn't *they* invent refrigerators and motor cars and tinned dog food?

Under cross-examination he will generally grant that a white man holding fifty blacks at bay with a machine gun is employing an acquired and not an innate advantage, but it is more difficult to persuade him to see that certain ideas which endow their possessors with advantages are just as much acquirements as the machine gun is. A knowledge of medicine or of mechanics will give any man controlling power over less well-informed people, whether at home or abroad. But, whoever he is, he first has to learn his medicine or his mechanics, and the determination of our medical colleges and schools of engineering to keep non-whites out argues more forcibly than all their protests to the contrary that the Negro, the Hindu, the Chinese, and the Japanese could also learn them if given the chance.

Our mechanical civilization, as a matter of fact, derives from the scientific attitude of the Greeks, as also do medicine, astronomy, and other of the arts upon which the white chauvinist congratulates his 'race.' But the Greeks, who illustrate that cultures can recede as well as advance, are hardly today regarded as leading members of that race—not, at least, by those who saw to it that they were discriminated against in America's immigration and college-admission quotas. And the Greeks, we must remember, got much of their thought from the Egyptians, who are definitely non-whites.

The Romans were living much as we live today, with public restaurants, swimming pools, summer cottages, stadiums, and lipstick, when our Nordic ancestors were still painting their bodies blue, inhabiting mud houses, and offering human sacrifices to oak trees. It is humiliating to face it, but the cognoscenti of that day did not rate them

very high even as savages. 'Do not obtain your slaves from Britain,' Cicero advised Atticus, 'because they are so stupid and so utterly incapable of being taught that they are not fit to form a part of a civilized household.'

To the racialist, of course, all this may seem a further argument in our favour. If we got such a late start and still came out ahead, we must be good. But the answer to this is that time is not a proper measure to apply to cultural progress. Changes that have required centuries among some peoples take place among others within a few years. Dickens, travelling in 1842 on the then western frontier of the United States, had the pleasure of meeting a Choctaw chief in a salt and pepper frock coat reading Scott's *Lady of the Lake*.

Cultural change is dependent more upon the stimulus of new experiences than upon the mere passage of time. Without such a stimulus it can be exceedingly slow, as the histories of various static civilizations testify. And the most important of all cultural experiences is contact with members of a different culture. Advances of culture depend on the chances that any group has to learn from the experience of others, and the more contacts the greater the opportunities to learn. Isolated peoples have primitive cultures because they have no neighbours from whom to learn 'foreign' ways. The real advantage that the German has over the Hottentot is that he has known the Frenchman longer.

NOTHING TO CROW ABOUT

THE Negro problem is *the* American problem. Until a white American decides whether the Negro is or is not potentially his equal, all his talk of 'liberty,' 'equality,' 'free enterprise,' and so on is meaningless verbiage.

Most white Americans, of course, have decided, clearly and definitely. The male Negro of popular fancy is large, libidinous, and lazy. His thick lips, long arms, and kinky hair plainly mark him as more 'apelike' than the whites. He is obsessed with the desire to rape a white woman and richly endowed with the parts and passions needed. In the intervals of raping he shoots craps to the accompaniment of shrill, stereotyped cries.

The female Negro (old style) is fat and friendly, eternally afflicted with 'the mis'ry,' an amusing form of hypochondria. She is given to a great deal of grumbling that need not be taken seriously and will frequently scold her mistress when it is for the mistress's good. She is frightfully loyal, and in moments of family crisis will contribute her life's savings to her employers with a gruffness that conceals her true emotion. She is a wonderful cook but is utterly unable to furnish recipes or to describe her art. She has an almost magic way with sick (white) children, and when a child has been given up by noted specialists she will indignantly throw all medicines out of the window, administer a simple, secret concoction of her own, and have the little one back in laughing health in no time.

She differs tremendously from the female Negro (new

style), who is an aggressive and dangerous malingerer, a member of a subversive organization founded by Mrs. Roosevelt, and whose activities consist of pushing white women off the pavements on Thursday afternoons and trying on hats in millinery stores so that they will be spoiled for all other customers.

Both male and female Negroes are said to be easily frightened, particularly by ghosts, and show their fright by rolling up the whites of their eyes and shaking their knees. They have a characteristic, unpleasant smell. They have smaller brains than whites. Their intellectual development stops at puberty, making them children all their lives, though to offset this limitation they have certain intuitions denied to the superior race. Their diet is composed almost exclusively of fried chicken and pork chops, with water-melon for dessert. Above all, they are happy, happy all the time, singing spirituals and jiving around, gaily irresponsible. Sometimes, when their happiness becomes unendurable, they cut each other's throats with razors.

Before examining these articles of faith, it might be well to state that the American Negro is physically different from the American white. His head is slightly longer and narrower, and its cranial capacity is less. His hair line is lower on his forehead. His eyes are set wider apart. His nose is broader and shorter and has a lower bridge. His jaws project farther and are accentuated by thicker lips. His torso is shorter, his arms longer, his chest shallower, his pelvis narrower and smaller, and his legs longer. He weighs more and is shorter than the white. His skin contains a greater amount of black pigment. His hair is wavy, curly, frizzy, or woolly, and is less thickly distributed. And he has more sweat glands.¹

¹ See Melville J. Herskovits: *The Anthropometry of the American Negro* (New York: Columbia University Press; 1930). And see M. F. Ashley Montagu:

But these differences in no way support the popular belief in his inferiority. In some respects, in fact, they indicate his superiority. The large upper jaw, for example, is a distinct advantage, since the reduced size of the upper jaw of the whites causes a great deal of their dental and sinus trouble and gives them a higher incidence of cleft palate and harelip. The smaller pelvis, on the other hand, may constitute a disadvantage, though this has not been proven.

Nothing so sensible as functional utility plays any part, however, in the vulgar estimate of superiority or inferiority. The common values are better expressed in the often-heard judgment that Negroes are 'more like apes,' a kinship that is felt to be indicated by the thicker lips, flatter nose, darker skin, longer arms, and kinkier hair.

But, as a matter of fact, the Negro is not more apelike than the white. Some apes do indeed have dark skins, and all have flat noses and long arms, but, as a visit to the zoo will clearly prove to any fair-minded person, their lips and hair are more like the lips and hair of white men than of Negroes. The Negro's arms are proportionately longer than the white man's, and that is apelike; but then so are his legs, and that is most *un*apelike, so that it seems pretty much of a draw. If the comparison were pushed, and if similarity were accepted as undesirable, the white man might have slightly the worse of it, for in general body hairiness and massiveness of the brow ridges he is more apelike than the black man.

On the whole it is best to spare both men and apes the indignity of comparison.

The un-apelike character of the Negro's longer legs, as has been said, has been ignored. But their unsportsmanlike

'The Physical Anthropology of the American Negro,' *Psychiatry*, February 1944, pp. 31-44; and 'Physical Characters of the American Negro' by the same author in the *Scientific Monthly*, July 1944, pp. 56-62. Negro mammals, by the way, are less broad in the hips than white mammals. See Amram Scheinfeld: *Women and Men* (New York: Harcourt, Brace and Company; 1944), p. 142, n.

character has been strongly insisted upon by those who cannot endure the thought that a Negro should ever definitely triumph over a white man. When a Negro and a white boy run against each other, these people contend, they do not compete on an equal footing, for the Negro, by virtue of his longer legs, takes a bigger stride each time. This, it will be remembered, was the argument by which the Nazis solaced themselves for their defeat by the Americans in the 1936 Olympic Games. Since so many of the American participants had been Negroes,¹ the Nazis claimed that they had been outmatched by animals, and that if one reckoned, as one should, only those points won by human beings (i.e., 'Aryans'), they were clearly the victors.

Their logic, however, had nothing to stand on. For it so happens that many Negro athletes have legs and feet that are predominantly white in their characteristics. And even if they were not, they would not have the advantages claimed for them.²

This inconsistency, of ignoring what seems a favourable and stressing what seems an unfavourable characteristic, is only an apparent contradiction, for the true consistency of almost all vulgar errors concerning race lies not in their agreement with each other but in their support of the great principle of white supremacy. Never mind what the non-whites do or do not, have or have not, it all adds up to the fact that they are inferior. Even when they are conceded an advantage, it will be found on closer scrutiny that the concession is in reality derogatory and is intended to justify some exclusion or discrimination.

Thus the belief that the Negro is 'equipped' to endure

¹ Owens (who made four world's records in one afternoon), Williams, Metcalfe, Luvalle, Robinson, Pollard, Woodruff, Johnson and Albritton.

² See Montague Cobb: 'Race and Runners,' *Journal of Health and Physical Education*, vol. 7, 1936, pp. 3-7, 52, 56. And see Julian H. Lewis: *The Biology of the Negro* (Chicago: The University of Chicago Press; 1942), p. 73.

heat better than the white man serves to distract attention from the fact that he is not. Millions of Negroes work long hours in the hot sun for others' profit, and it is easier and cheaper for the others to believe that the Negroes 'just naturally don't mind' than it would be to provide shorter hours, rest periods, and cool drinking water. Yet, contrary to general belief, the pigmentation of their skin affords them no great protection from sunburn or heat prostration. Because of their occupational exposure, particularly in the South, the death rate among Negroes from the effects of heat is from two to six times as high as the rate among whites.¹

The myth of the Negro's sexual athleticism seems to be in part functional and in part sheer salaciousness. It heightens the likelihood and the dangers of rape and hence justifies 'keeping the niggers in their place.' But it seems more a product of that itching interest, usually disguised as horror or moral indignation, which all peoples take in the sexual behaviour of other groups. The Chinese, we are told, ascribe the most tremendous feats to white men.²

The danger latent in the Negro's libido is heightened by the fact that his mind is 'undeveloped'—a situation brought about by the fact that his brain, smaller than a white man's to begin with, is permanently stunted by the premature closing of his cranial sutures. Dr. Robert W. Shufeldt has given this charge full expression in his vigorous book *The Negro a Menace to American Civilization*:

'In the skull of the negro [he says] the cranial capacity and the brain itself is much undersized. On the average it [the Negro skull] will hold thirty-five fluid ounces, as against forty-five for the Caucasian skull. In the negro the cranial

¹ Dr. Louis I. Dublin and Dr. Alfred J. Lotka: *Twenty-five Years of Health Progress* (New York: Metropolitan Life Insurance Company; 1937), pp. 517-19.

² For the flattering delusions of the Chinese, see Emily Hahn: *China to Me* (New York: Doubleday, Doran and Company; 1944), pp. 287-88.

bones are dense and unusually thick, converting the head into a veritable battering-ram. Moreover the cranial sutures unite firmly very early in life. This checks the development of the brain long before that takes place in other races, and this fact accounts to some extent for the more or less sudden stunting of the Ethiopian intellect shortly after arriving at puberty.¹

Many have agreed with him. Thus Senator Bilbo, writing in 1945 to Mrs. Ruth M. Apilado, a Negro teacher in the Chicago schools, to advise her to get 'a job as a charwoman,' said, with as much grace as grammar: 'Evidently you did not try to learn anything until you had reached maturity, because you know it is a biological fact that a Negro's skull, where the parts of it are connected by sutures, ossifies by the time a Negro reaches maturity and they become unable to take in information.'

Some have claimed even further limitations. Professor Robert Bean, writing in the *American Journal of Anatomy* a generation ago, maintained that his dissections had not only shown the Negro to have a smaller brain than the white man but had definitely revealed that vast and peculiar section devoted to thoughts of 'rape and murder.'²

Shufeldt's statement lacks Bean's originality, but it carries more delusions. Not one item in it is true. The Negro brain is smaller than the white brain, but the difference is forty cubic centimetres, not ten fluid ounces. Of course this will do as well as any other quantity where there's a will to believe. But before the white chauvinist bases his superiority upon such a slight difference in brain size he ought to be informed that Kaffirs, Japanese, American Indians, Eskimos, and Polynesians all have brains larger than his. So that if he persists in correlating intellectual capacity with skull

¹ Robert W. Shufeldt: *The Negro a Menace to American Civilization* (Boston: The Badger Press; 1907), p. 35.

² Robert Bennett Bean: 'Some Racial Peculiarities of the Negro Brain,' the *American Journal of Anatomy*, vol. 5, 1906, pp. 353-415.

For Senator Bilbo's letter, see the *Chicago Sun*, July 29, 1945, p. 14.

capacity he will find himself pretty far down on the totem pole.¹

As for the thickness of the Negro's skull, no scientific measurements have ever shown that it differs to any appreciable extent from the white skull.² None the less, as H. L. Mencken says, the belief 'that if one hits a negro over the head with a cobblestone, the cobblestone will break' is a part of American national faith.³ The recognition that one would like to hit a Negro over the head with a cobblestone is, of course, kept below the level of consciousness. But the popularity, at county fairs and boardwalks, of booths at which millions pay for the 'fun' of throwing balls at a Negro's head suggests that the wish and the thought may not be unrelated. The thickness of the skull, as always, absolves the conscience.

The business about the sutures has been made the subject of scientific investigation, and a most careful and detailed study has shown that there is no difference whatever in the character of the closure in Negroes and in whites. Anyone who takes the trouble to read the results of the painstaking work of T. Wingate Todd and D. W. Lyon, and then reflects on how easily lies are uttered and how difficult they are to refute, may well wonder whether all human sutures don't close prematurely.⁴

The belief that the Negro's brain is undeveloped is one of those melancholy vulgar errors that breed their own confirmation. It is at puberty that most Negro children are

¹ T. Wingate Todd: 'Cranial Capacity and Linear Dimensions in White and Negro,' *American Journal of Physical Anthropology*, vol. 6, 1923, pp. 97-194.

² Professor M. F. Ashley Montagu, who has seen hundreds of Negro and hundreds of white skulls sawn through, is of the opinion that there is no difference in their thickness.

³ George Jean Nathan and H. L. Mencken: *The American Credo* (New York: Alfred A. Knopf, Inc.; 1921), p. 142.

⁴ T. Wingate Todd and D. W. Lyon: 'Suture Closure. Its Progress and Age Relationship'; Part IV: 'Ectocranial Closure in Adult Males of Negro Stock,' *American Journal of Physical Anthropology*, vol. 8, 1925, pp. 149-68.

withdrawn from school, to do manual labour or to rot in idleness. It is at puberty that most of them learn that they are outcasts. Their previous friendly associations with white children (formerly much more common than now) are usually terminated at the dawn of their sexual maturity. They are no longer 'pickaninnies' and 'cute,' but 'niggers' and 'dangerous.' Little wonder that their subsequent development, restricted by poverty, ignorance, and lack of opportunity, embittered by discrimination and harassed by fear and uncertainty, very rarely shows an intellectual flowering. And less wonder still when one realizes that the very people who find them eternal children would be actively resentful of any indication that they were not.

That not merely the anatomy but the whole physiology of the Negro is believed to be utterly different from that of the white is indicated in the talk one hears of 'Negro blood'—talk that became action when the Red Cross agreed to segregate Negro and white blood in its blood banks. The officials who were responsible for this pandering to prejudice may not have shared the vulgar error. They may have felt that if the thought of receiving an infusion of mixed blood would be distressing to some soldiers—as no doubt it would—it was their duty to humour the fallacy. But in so doing, of course, they managed to distress other soldiers, the black ones.

The objection to Negro blood, in so far as it is not just reluctance to have any contact with anything Negro, is based apparently on the ancient idea that the blood is the carrier of hereditary characteristics. But the blood stream is, ultimately, a part of the alimentary and respiratory systems. It is the device by means of which food and oxygen are carried to the individual cells and waste matters carried away. It has nothing whatever to do with reproduction. And the blood of Negroes is, in every respect, the same as the blood of whites. There are differences in the distribution of the blood groups

among all human groups, and the Negro has a somewhat higher frequency of certain blood groups than have whites. But he has all the blood groups the whites have, and every element of his blood, as far as science has been able to determine, is the same as theirs.¹

Many people who dread the contamination of Negro blood will receive into their veins serums derived from the blood of horses (such as those for typhoid and diphtheria) without the least fear of neighing or growing a tail.

An even commoner argument to prove that the very physiology of Negroes is different from—and inferior to—that of the whites is the contention that Negroes ‘naturally’ give off a characteristic, unpleasant odour. Millions believe this. Others, who have associated as much and as intimately with Negroes, have failed to perceive anything more ‘natural’ than the sweat that their labour produces made stale and rancid by the lack of toilet facilities in the tenements and hovels in which they are condemned to live. Their poverty compels them to cook again and again with the same grease, and the unpleasant smell of this often permeates the clothes that they cannot afford to have cleaned. It is interesting that many upper-class Englishmen similarly claim that their lower classes have a ‘natural’ unpleasant smell.

At one time or another almost every group of people has been charged with this distinction. That Jews had such a smell was once, as Sir Thomas Browne says, ‘a received opinion,’ but except in a metaphorical sense the most furious anti-Semite would hardly receive it today. Negroes, according to Richard Wright, say that ‘Niggers smell from sweat. But white folks smell *all* the time.’ *Time* quotes ‘jungle-veteran Sergeant Delmar Golden’ as saying that ‘You can smell a battalion of Japs 500 yards away’—a peculiarity

¹ M. F. Ashley Montagu: ‘The Myth of Blood,’ *Psychiatry*, vol. 6, 1943, pp. 15–19.

which if true must have greatly simplified our military operations. The Japs had the accusation coming, though, ever since their great anatomist, Buntaro Adachi, published a learned—and uncomplimentary—monograph 'On the Smell of Europeans.' That the particular Europeans whose smell he disliked happened to be the Germans must have constituted a minor strain on the Axis.¹

The baselessness of such accusations is shown by the explanations offered to support them. Thus a case of discrimination against Negroes in employment was defended on the grounds that 'when a white man sweats, salt comes on his skin to take the smell away; but when a nigger sweats he's got no salt.'² Many a person who cannot endure sitting next to Negroes on trains or buses, and insists that he would rather not eat than eat next to a black man, seems actually to enjoy eating in dining cars, and gets his meal down without gagging, even though Negroes have cooked it, handed it to him, and are standing beside him while he swallows. Professor A. M. Lee, of the Department of Sociology of Wayne University, investigating the Detroit Race Riot of June 1943, was told by one of his witnesses that he had become sick when the lights came on in a movie and showed him that he had been sitting next to a Negro. His explanation was that the Negro 'smelled so bad'—but his sense of smell had seemingly been inoperative in the dark.³

That every individual has a characteristic odour appears plainly from the ability of bloodhounds and other dogs to trail a man after smelling some article of his clothing. Gould and Pyle refer to 'a young lady who, without any possibility

¹ Richard Wright: *Black Boy* (London: Victor Gollancz). *Time*, February 21, 1944, p. 65. Buntaro Adachi: 'Der Geruch der Europäer,' *Globus*, vol. 83, 1903, pp. 14-15.

² So quoted in *PM*, October 8, 1942, p. 2.

³ Alfred McClung Lee: *Race Riot* (New York: The Dryden Press; 1943), p. 110.

of fraud, exhaled the strong odour of vanilla.' Plutarch tells us that Alexander the Great's underwear smelled most sweetly, and Henry More, the Cambridge Platonist, claimed that, as a special mark of divine favour, he himself emitted the fragrance of violets in an even more intimate connection.¹

Be these claims as they may, there is no doubt that certain species of animals do give off highly characteristic odours, odours that are apparent to even our dull noses. And it hardly takes a logical bloodhound to spell out the implication that if the Negro has a different smell he is a different species.

But no one has ever demonstrated that he has a peculiar smell. Tests have been made with phials of sweat taken from Negroes and whites exercising in a gymnasium, but none of the subjects—though many professed to be able to 'smell a nigger'—was able to distinguish them. Different degrees of unpleasantness were noticed, but the subjects were unable successfully to assign the phials to whites or blacks.²

As a compensation for their various shortcomings Negroes are generally thought to have minor supernatural powers. They can recognize 'signs' in the behaviour of birds and other animals. They are clairvoyant. And they have an intuitive perception of character. Thus Margaret Mitchell, in *Gone with the Wind*, tells us that the true kindness underlying Gerald O'Hara's rough manners was always discovered 'at first sight' by 'children, negroes and dogs.' Superficially, this seems a compliment, but the phraseology carries a reverse implication that Negroes are neither human nor adult.³

An even more common claim is that Negroes are 'naturally'

¹ George W. Gould and Walter L. Pyle: *Anomalies and Curiosities of Medicine* (Philadelphia: W. B. Saunders; 1897), p. 399. Plutarch's *Lives* (London: Loeb Classical Library; W. Heinemann; 1919), vol. 7, p. 233. Henry More: *A Collection of Several Philosophical Writings* (London: Joseph Downing; 1712), *Scholia on Enthusiasmus Triumphatus*, Section 58, p. 52.

² Otto Klineberg: *Race Differences* (London: Harper & Brothers).

³ Margaret Mitchell: *Gone with the Wind* (London: Macmillan and Company).

happy. But if they are, they give the lie to all human experience, for they are happy without health, wealth, or hope.

They may seem happy. But if this seeming should turn out to be some forced disguise, it would surely argue that their true state was a wretched one—misery without the solace of dignity. And that such is their true state is the testimony of their own writers and of unprejudiced foreign observers. Richard Wright speaks of 'the strange absence of real kindness in Negroes,' their lack of tenderness, passion, and hope, and the 'unconscious irony' of those who mistake the Negro's 'negative confusions, flights, fears, and frenzy under pressure' for a passional existence.¹ More than a hundred years before, Harriet Martineau had observed and commented on the same thing. Nothing in her description of America could have given more offence than her assertion that the 'endearing relation' that subsisted between some masters and slaves was, as nearly as she could see, a mutual pretence founded on fear.²

In our own time Gunnar Myrdal, the Swedish economist, who was brought to America by the Carnegie Corporation to make a special study of the Negro problem, was particularly struck by the assumption of happiness by the Negroes, which he regarded as 'a survival trait.' A great deal of Negro humour, he felt, is protective. There are privileges and immunities in the jester's role. An unsmiling Negro is too frightening to go unattacked. The shrill, cackling laugh, the zany jibe (always discreetly self-directed if whites are within hearing), and the harmless buffoonery are safety devices. But he noted that their loud, good-natured banter is very near to aggression and often degenerates into obscenity.

¹ Wright: *Black Boy*, p. 33.

² Harriet Martineau: *Society in America* (London: Saunders and Ottley: 1837), vol. 2, pp. 152-54.

Their dispositions, in his opinion, are not so 'sunny' as the whites find it comfortable to believe.¹

Myrdal's surmises are confirmed by the statistics of the New York State Hospitals for the insane. In the years 1929-31, for example, twice as many Negroes (per capita) as whites were admitted to these institutions, despite the fact that Negroes were the younger population and should therefore have had less insanity. Many of these admissions, it is true, were due to paresis and alcoholism, but only schoolboys believe that venereal infections and drunkenness indicate happiness. And even in those diseases that the populace is willing to connect with despair and misery—dementia praecox and the manic-depressive psychoses—the Negro rate was from fifty to one hundred per cent higher than the white.²

The Negroes' own view of their notorious happiness is, perhaps, summed up in the statement of an old Negro who, when asked by his employer why he was always so happy, answered: 'If I wasn't happy, I'd be more miserable than I am.'

A widespread fear concerning Negroes is that they are 'outbreeding' the whites and will in time control the country. Prophets of evil have threatened every generation of Americans with this bogey, and every generation has believed its own prophet without bothering to check the records of previous prophets.³ Two minutes of reading in the census reports, however, ought to dispel any alarm. Since the formation of the republic Negroes have increased in numbers in the United States, but they have decreased in proportion

¹ Myrdal: *An American Dilemma*, pp. 960-61.

² *Ibid.*, pp. 980-81.

³ Harriet Martineau says that President Madison was 'almost in despair' at the thought of the rapid increase of the Negroes. In 1897 Edmund Shaftesbury warned the nation that by 1927 there would be fifty million Negroes in America. There were twelve million.

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to the whites. Between 1790 and 1940 they increased seventeen times. But the white population increased thirty-seven times, so that the percentage of Negroes declined from 19 to 9.¹

It is true that they now have a slightly higher birth rate than the whites; between 1930 and 1940 their ratio increased by one-tenth of one per cent. But those whom this disturbs may be comforted by the fact that they also have a much higher death rate. In 1930 a Negro child at birth had a life expectancy of 48 years, as against a white child's 61 years. Negro stillbirths in 1940 were fifty per cent higher, proportionately, than white stillbirths, and the rate of mortality of Negro infants during the first year of life was almost twice that of white infants.

White chauvinists who are exasperated at the thought that the standard of living is rising among the Negroes may be mollified by the further thought that this will probably mean a decline in their birth rate. It has done so with all other peoples. But the delight of the mollification will in its turn be qualified by the still further thought that it will also lower the death rate. Fewer will be born, but fewer will die. Thus imperfect are all earthly blessings.

¹ For the actual figures, see Myrdal: *An American Dilemma*, pp. 157, 175.

SOME OF MY BEST FRIENDS

NEXT to the Negro in the American's consciousness of 'race' comes the Jew. He too is a member of a persecuted minority, though his afflictions, compared with those visited upon the Negro, are hardly more than annoyances, a fact which his greater volume of complaint sometimes obscures.

For the Jew is vocal. He has the talent, the inclination, and, in America, the security, to squawk—and squawk he does. And his squawking, though often exasperating, is a good thing. For he is intelligent enough, or at least his leaders are intelligent enough, to perceive that the best hope of a persecuted minority is equality and justice. So that in seeking his own welfare the Jew must first seek the common welfare. Protesting against privilege, he cannot ask for privilege but must demand fair play. Persecuted, he must plead for all the persecuted and speak in the name of common humanity.

It is not, for example, an accident that so much of what has been done for the Negro in America has been instigated by Jews. Their enemies sneer and say that the Jew uses the Negro 'as a stalking horse.' Perhaps he does, but what of it? Since he is stalking injustice and oppression, in defence of what we profess, at least, to be our highest ideals, black and white alike have cause to be grateful to him. In the American Constitution the Jew finds all the protection that he or anyone else can ask for, so that his 'radicalism' takes the paradoxical form of insisting on law and order. The accusation of reactionaries that all liberal movements are 'Jewish'

is untrue, but to the credit of the Jews—and the advantage of the nation—it can be said that educated Jews have supported such movements out of all proportion to their numbers. The Jew has become a great stimulator of the national conscience, a continual reminder—albeit sometimes a little raucous—of our failure to live up to our ideals. In the weak this sometimes takes the form of whining, and in the despairing, of cynicism and anarchy, but in the strong it becomes an impassioned defence of human dignity.

That those who believe in racial differences have selected the Jews for particular attention is an ironical refutation of their whole theory, for it would be hard to find any group on the face of the earth more thoroughly mixed, biologically, than they are.

‘Upon consult of reason [wrote Sir Thomas Browne three hundred years ago], there will be found no easie assurance to fasten a material or temperamental propriety upon any nation; there being scarce any condition (but what depends upon clime) which is not exhausted or obscured from the commixture of introvenient nations either by commerce or conquest; much more will it be difficult to make out this affection in the *Jews*; whose race, however pretended to be pure, must needs have suffered inseparable commixtures with nations of all sorts; not only in regard of their proselytes, but their universal dispersion; some being posted from several parts of the earth, others quite lost, and swallowed up in those nations where they planted.’¹

Much of what is thought to be physical in the Jew is really social. The shambling walk, for instance, that characterizes so many ghetto Jews is frequently ascribed to an innate physical peculiarity, and we are told that ‘all Jews have flat feet.’ But flat feet are cause for rejection from the Army and the Navy, and there were far too many Jews in the

¹ Sir Thomas Browne: *Works* (Edinburgh: John Grant; 1927), vol. 2, pp. 148–49.

armed services for this to be a universal, or even an unusually common, defect among them. Something of the same walk is noticeable among Negroes and is in fact as indispensable, in a humorously exaggerated form, to Negro comedians and blackface funny-men as are rolling eyes and shaking knees. The members of the audience, roaring with delight at 'the way niggers are,' are, of course, enjoying a cheap debauch of self-laudation, magnifying themselves in comparison with this pleasant fiction, projecting against screen or backdrop their unconscious resentments, and seeing, in the stage Negro, Jew, or Italian, someone comfortingly more inane, stupid, timid, and uncoördinated than themselves.

Since Jews have not the ineradicable stigma of colour, a Jew who does not resemble the stereotype—as hundreds of thousands of them do not—is simply not recognized as a Jew.¹ Indeed, one of the most 'insidious' things about the Jews is that one is never sure who is a Jew. One would think that this would knock the props out from under anti-Semitism, but, in actuality, it serves as an added grievance: they 'conceal' themselves cunningly, and 'polite' people have to feel out a strange company very gingerly before they may safely air their prejudices.

Vincent Sheean, certainly a shrewd enough observer of men, tells us that when he, a country boy from rural Illinois, was first thrown into the 'singular ferocity' of undergraduate life at the University of Chicago, he joined a Jewish fraternity without any conception of the enormity he was committing. He was not at all aware that this group differed from other fraternities, and he would have been initiated had not horrified friends made it their business to open his eyes. That was in 1919, and it is safe to say that it could have

¹ And see Gunnar Myrdal: *An American Dilemma* (New York: Harper & Brothers; 1944), p. 683, note c, ~~for the astonishing suggestion that the same holds for Negroes.~~

happened at that time to millions of American boys. It could not today; anti-Semitism has done its work.¹

Despite such incidents, there are those who insist (always with triumph) that they can 'spot a Jew every time,' though, of course, they can spot only those they can spot, and have no way of knowing how many they failed to spot or how many times they were wrong. When these eager spotters are asked to state their criteria, they either retreat to 'intuition' (the last refuge of a shameless man) or list a set of physical features of which the chief are a dark skin, frizzy hair, and a hooked nose.

'Intuition' is far too high in the intense inane to be reached by logic or evidence and so must simply be by-passed. But the list of features can be dealt with. Rather than being, as claimed, 'characteristically Jewish,' they are Levantine, and serve to distinguish only the minority of Jews who come from the Levant. They do not distinguish Jews *as Jews* at all, for they in no way set them apart from other Levantines, such as Syrians, Armenians, Turks, Lebanese, and many Arabs.

The fact is that the Jews in their dispersion have intermarried so completely with the various ethnic groups among which they have found themselves that their characteristics are those of the group in which they live or have recently been living.

Thus in 1933, approximately thirty-five per cent of male Jews in Germany married non-Jews; in Vienna, in 1932, sixteen per cent; in Bohemia, in 1933, thirty-one per cent; in Trieste, in 1927, sixty-one per cent; and in Central Russia, in 1926, twenty-one per cent.² As a result of such profuse intermarrying, the Jews generally have the physical traits of

¹ Vincent Sheean: *Personal History* (London: Hamish Hamilton).

² Arthur Ruppin: *The Jewish Fate and Future* (London: Macmillan and Co., Ltd.; 1940), p. 108.

the nation of which they are a part, as has been shown by many investigations. Thus, for example, in the Russian department of Mohilev only five per cent of Jews have light-coloured eyes. But in Galicia—that part of Poland lying on the northern slope of the Carpathians, a region which for one hundred and fifty years was a part of Austria—twenty-three per cent of the Jews have light-coloured eyes, while in Vienna it is thirty per cent. Hair colour shows the same ratio as eye colour. Turkish Jews show three per cent of blonds, Ukrainian Jews fifteen per cent, English Jews twenty-six per cent, German Jews thirty-two per cent. In Jerusalem, Jewish children from Middle and East Europe showed forty per cent of blonds, while Jewish children from Spain and Portugal showed ten per cent blond and even fewer blue-eyed.¹

Now, since these figures follow the population trends for blondness, they add up to one fact: Jews look like other people. Spanish Jews are dark; English and German Jews are dark and light in the proportions that Englishmen and Germans are dark and light; and Baltic Jews are like the Balts. What's more, there are Chinese Jews that look like the Chinese, and New York has a synagogue of Negro Jews, a congregation of more than five thousand. Some of these may be migrants from Methodism, lured by the sound of the shofar, but most of them claim to be strictly kosher.²

The most convinced anti-Semite will, of course, admit that there are blond Jews, will indeed insist that their blondness is a deliberate aggravation of their original offence in being Jews at all. But he will insist that the hooked nose is universally, invariably, and peculiarly theirs. So far as he is

¹ See Maurice Fishberg: *The Jews* (London: The Walter Scott Publishing Co., Ltd.; 1911); Karl Kautsky: *Are the Jews a Race?* (New York: International Publishers; 1926); and M. F. Ashley Montagu: 'Are the Jews a Race?' in *Man's Most Dangerous Myth* (New York: Columbia University Press; second ed., 1944).

² Roi Ottley: *New World A-Coming* (Boston: Houghton Mifflin Company; n.d. [1943], pp. 137-50.

concerned, it is the badge and distinction of the race; no Jew lacks it, no Gentile has it. W. S. Gilbert's 'bus-directing Jew' in *The Bab Ballads* underwent a nasal transformation the moment the bishop converted him:

The organ which, in man,
Between the eyebrows grows,
Fell from his face, and in its place
He found a Christian nose.

Yet, actually, only a minority of Jews have the privilege of sharing this kind of nose with the American Indians and with certain Asiatic, Mediterranean, and Alpine peoples. The late Dr. Maurice Fishberg, a mighty nose measurer, measured the noses of over four thousand New York Jews and found that only fourteen per cent of them had the 'typical' Jewish nose.¹

As with the Negroes, so with the Jews, there have been efforts to prove that they are physiologically different from non-Jews, constituting, as it were, another species. It is frequently asserted that there are certain diseases 'peculiar to Jews.' Thus Dr. George Boris Hassin, writing in 1925, said that amaurotic family idiocy 'occurs exclusively in Jewish families come from the former Russian Poland,' and added that 'this racial proclivity . . . remains the sole indisputable etiologic factor' of the disease. By 1941 he was hedging slightly, though very slightly. 'Typical cases of this disease,' he then wrote, 'are known to occur almost exclusively in Hebrew children, especially those whose parents emigrated from the Polish provinces of the former Russian Empire.' In the meantime he had been supported, or echoed, by Dr. Frank R. Ford, who in 1937 had declared that the disease 'is with few exceptions restricted to subjects of Jewish race.'²

¹ Fishberg: *The Jews*, p. 79.

² For Dr. Hassin's first statement, see *Pediatrics by Various Authors*, ed. Isaac A. Abt, M.D. (Philadelphia: W. B. Saunders Co.; 1925), vol. VII, p. 335;

Since these statements did not appear in the *Dearborn Independent* or in *Social Justice*, but in learned works written for the exclusive use of medical specialists, they would seem to the modest layman to settle the matter. Such assurances, not merely from doctors but from doctors who teach doctors, must surely rest on thorough investigation and on repeated, tested observation. Such must have been the conclusion of the *Encyclopædia Britannica*, which, in its latest revision, says that the disease 'occurs mainly, if not entirely, in the Jewish race.'¹

The impudent sceptic, however, unabashed by the voice of authority, solemn and resonant though it may be, cannot regard the matter as closed. Dr. Hassin's 'indisputable' is a challenge. Those sonorous phrases seem to cover a faint uneasiness. There are questions yet to be asked. What does Dr. Hassin mean by 'almost' exclusively? And who are Dr. Ford's 'few exceptions'? These are curious qualifications that suggest certain weaknesses in their assertions. Do such exceptions pertain as an 'indisputable etiologic factor' of other diseases? Who are these strangers within the gates? If it is racial, how did some wretched goy get himself afflicted with it? And once you begin to talk about Polish Jews haven't you introduced a geographic factor that cancels out the biologic factor? It may even be asked, in fact, if in intro-

and for his second statement, see *Practice of Pediatrics*, ed. Joseph Brennemann, M.D. (Hagerstown, Maryland: W. F. Prior & Co.; 1944), vol. 4, p. 1 of Chapter 9.

Frank R. Ford, M. D.: *Diseases of the Nervous System in Infancy, Childhood and Adolescence* (London: Baillière and Company).

The manner in which the illusion of race can muddy even the clearest minds is shown by Sir William Osler's comment on race and tuberculosis: 'The influence of *race*,' he says, 'is important. It is a highly fatal disease in negroes. . . . This is often due to crowded living conditions; probably there is also racial lack of resistance; however, under good economic and hygienic conditions negroes seem to do about as well as whites.'—Sir William Osler: *Principles and Practice of Medicine* (New York: D. Appleton-Century; 1944, 15th ed.), p. 220. In other words: 'Race is an important factor, but when you think it over race really hasn't anything to do with it.'

¹ The *Encyclopædia Britannica*, 14th ed., 1943 revision, vol. 12, p. 387.

ducing Poland, of all countries, a political factor has not been introduced. And does the disease come and go, epidemic with each partition?

And who would ever guess, from these pronouncements, that one of the fullest studies of the disease known was made in rural Norway?¹ It was made there because the population of rural Norway is about as stable a population as can now be found in Western Europe and because for centuries in Norway all births have had to be recorded in the church registers, so that in the lonely Norwegian valleys there remains for the student of eugenics one of the largest available groups of complete family histories.

But if we are to believe Dr. Hassin and those who repeat his words, we must also believe that rural Norway is populated, and has been populated for centuries, by Polish Jews—and *Lutheran* Polish Jews at that!

Another 'Jewish' disease is Buerger's disease, a circulatory disorder claimed by its 'discoverer,' Dr. Leo Buerger, to be an affliction limited almost exclusively to Jews. In 1924 Dr. Buerger reported that of five hundred patients whose cases he had studied only ten were non-Jews. With many doctors, even many specialists, the matter is settled: Buerger's disease is a 'Jewish' disease.²

To the sceptic, however, it seems to be the old story of the white horses and the black horses.³ Dr. Buerger's practice

¹ See '*Die juvenile amaurotische Idiotie. Klinische und erblichkeitsmedizinische Untersuchungen.*' Von Torsten Sjögren, Statens Institut för Rasbiologi, Uppsala. In *Hereditas*, Band XIV, Häft 3, 1931, pp. 197-426.

² Leo Buerger: *Circulatory Disturbances of the Extremities* (Philadelphia: Saunders; 1924), p. 276.

³ Mr. Bones informs Mr. Interlocutor that the white horses on his uncle's farm eat twice as much as the black horses, and wonders why this should be. They examine the evidence and conclude that it is because his uncle has twice as many white horses as black horses. The unfailing success, at minstrel, vaudeville, and burlesque shows, of this venerable chestnut shows that the vulgar appreciate the absurdity of the non-scientific approach once it is put before them in terms simple enough for them to comprehend.

at the time of his 'discovery,' when he was attached to Mount Sinai Hospital in New York, appears to have been largely among Jews. But Dr. Horton, of the Mayo Clinic, at Rochester, Minnesota (where, one assumes, the percentage of Jewish patients is not so high as at Mount Sinai), published a further study of the disease, in 1938, that did not bear out Dr. Buerger's observations. Dr. Horton had studied 948 cases, of which only 262 were Jews, and came to the conclusion that 'in spite of the fact that it was formerly supposed to occur almost exclusively among Jews, it is now known to affect persons of all races.'¹

There are other allegations that imply a separate biology for Jews. Guttmacher says that 'all commentators agree that Jews have a higher incidence of male children than non-Jews.'² But what is a Jew? Who are the commentators? And with what limitations shall 'all' be understood, since Fishberg, Kautsky, Scheinfeld, 'Haldane, Hogben, and Huxley are not among them? If it is true, it is curious, and the basis upon which the anonymous commentators reached their agreements should be explicitly stated.

The Jews, like the Negroes, are popularly endowed with certain psychological differences. Thus, among the arguments advanced against Brandeis's appointment to the Supreme Court in 1916 it was claimed that since he was a Jew he would be unable to interpret a system of law which was the product of occidental minds.³

That Jews are naturally 'cleverer than other people' is an invidious compliment frequently paid them. It is anti-Semitic because it supports the dangerous error that Jews are different from other men. It justifies discrimination, or at

¹ B. T. Horton: 'Thrombo-angiitis obliterans: a review of the incidence of amputation in 948 cases.' *Military Surgeon*, vol. 84, 1939, pp. 599-600.

² Alan Frank Guttmacher: *Life in the Making* (London: Jarrolds; 1939).

³ Mark Sullivan: *Our Times* (New York: Charles Scribner's Sons; 1933), vol. 5, p. 616.

least dulls the edge of indignation against it, by implying that their superior abilities will enable them to overcome any handicaps that are laid on them. Yet many Jews, demonstrating by their very act the fallacy of the assertion, are gullible enough to be flattered by it, and boast of 'Jewish intellect' or 'Jewish art' or 'Jewish culture' without any realization that they are playing their enemies' game.

There is, to be sure, a long tradition of respect for learning among the Jews, and this, plus social and economic forces that compel so many of them to become middlemen and professionals, has led to a high proportion of them following intellectual pursuits. But there is no reason to believe that their general intelligence is higher or lower than that of other people.

The Jew often shows his intelligence as a dog shows its teeth. Like anyone who is discriminated against, he is resentful and aggressive. The weakness of his position compels him to conceal his resentment, but he rarely conceals it (only master minds of fiction ever completely conceal resentment) so successfully as to avoid the imputation of being 'smart,' 'tricky,' 'untrustworthy,' etc. This aggressiveness in the face of restricted opportunity does indeed urge the intelligent, ambitious Jew to be an opportunist and to make the fullest use he can, where and whenever he can, of his talents—to 'get on,' in the good old Yankee phrase; and this no doubt lies at the bottom of the common belief. But it does not endow that Jew or any other Jew with more intelligence than he already had.

The very traits, by the way, for which the Jew and other recent immigrants to the U.S.A. are hated—their unscrupulousness in driving a bargain, their equivocation, the fact that 'you've got to watch them,' their boastfulness, penuriousness, aggressiveness, energy, and willingness to endure privation and even insult for the sake of a dollar—all these

are pioneer American 'virtues.' There is nothing in the whole sordid catalogue that was not charged against us, before the Greeks and the Jews ever came, by European visitors and freely admitted by our grinning forebears.¹

¹ See the comments of Mrs. Trollope, Dickens, Captain Basil Hall, Tocqueville, *et al.*, and, more recently, of D. W. Brogan in his *The American Character* (New York: Alfred A. Knopf, Inc.; 1944). For the admission, see *inter alia*, P. T. Barnum's autobiography.

LESSER BREEDS AND LATIN LOVERS

THE vagueness of the popular concept of race is shown by the frequency with which 'racial characteristics' and 'national characteristics' are used interchangeably, as though biological and geographical determinants were one and the same. Thus we hear that the Germans have 'organizing' minds (though they were the last people of Europe to get organized as a nation), that Italians are temperamental (though they endured Mussolini cynically for twenty years), and that Swedes are phlegmatic (though two of our greatest tragic actresses, Greta Garbo and Ingrid Bergman, are Swedes.) The folly of such generalizations is shown by the sweeping revisions that have had to be made in the popular conception of the Russian character. *Time* for many years made much of its assumption that 'the Russian mind' was incapable of dealing with modern mechanized civilization (as if De Seversky could not cope with an aeroplane), and Professor Hooton speaks of 'the emotional instability' of the defenders of Stalingrad.¹

Among these stereotypes none are more common than the gaiety of the Irish, the imitateness of the Japanese, the honesty of the Chinese, and the amorousness of the 'Latins.' 'Everybody 'knows' that the Germans drink unequalled

¹ For an amusing summary and parody of *Time's* attitude towards Russia, see an article by Robert McRoberts in the *New Republic* for May 19, 1937, pp. 38-39.

Professor Hooton's comment, directed at all Russians, will be found on pp. 12-13 of *Why Men Behave Like Apes and Vice Versa* (Princeton: Princeton University Press; 1940).

amounts of beer, that the Chinese subsist exclusively on rice, and that all Hindu girls are married before they are twelve.

Some of the Irish are gay, but George Bernard Shaw—certainly one of the gayest—insists that good humour, wit, and above all, imaginativeness are if anything rarer among the Irish than among the English. The Irishman of common conception, Shaw says, is an illusion, invented by the English to embody their own weaker qualities.¹

The imitativeness of the Japs is usually illustrated by the story of a Japanese spy who was allowed to steal the plans for one of our battleships. He thought he had the genuine plans, but in reality he had been permitted to carry away blueprints in which a slight but significant alteration had been made. Gloating, the copycat Japs followed the false design faithfully, only to have the battleship turn turtle once it put out to sea. When, however, the sternposts of several of our own warships were found to be defective, or when Victory Ships broke in two, no one assumed that we had been deluded by faked blueprints stolen from the treacherous Japs. Nor when seven of our destroyers were wrecked on the California coast off Arguello Light on September 9, 1923, was it assumed that the commanders of the last six, which were following the flotilla leader, were congenitally unable to make decisions for themselves.

Incidentally—though it is unreasonable to try to be reasonable about the story of the stolen plans—the blueprints for a battleship would have to be sneaked away in a fleet of trucks. The idea that they could be folded surreptitiously into the vest pocket is as absurd as the fiction in which it so persistently appears.

The Chinese, in contrast to the Japanese, are thought to be fantastically honest—so honest, in fact, that the wily Japs, rightly mistrusting each other, are said to employ only

¹ In the Preface to *John Bull's Other Island*.

Chinese in their banks. But if they do—or did—it may well account for the shortage of honest men in China, where, judging from the incredible corruption and blackmail that seems to strangle the whole national life, gangsterism is the accepted order of business.¹

Whether there are any other distinctions between the Chinese and the Japanese is a disputed point. Before the embers of Pearl Harbour had cooled, *Life* presented its readers with a two-page 'rule-of-thumb' for distinguishing 'friendly Chinese from alien Japs,'² upon which the *New Yorker* commented by showing two Japanese soldiers puzzling over a bulletin that professed to enable them to distinguish between friendly Germans and alien Americans and English.

But orientals in general have, in popular fancy, besides their yellow skin and 'slanting' eyes, certain common traits. They are inscrutably wise and fiendishly treacherous. The especially knowing will add, in a whisper, that their women have practically no breasts,³ though this may be an unconscious effort to make up for the unusually heavy burden that current mythology has placed on the Balinese.

The most superficial observation ought to suffice to show that the eyes of the Chinese and Japanese do not slant. They are set in their heads exactly as all other human eyes are set. Their unusual appearance (unusual, of course, to us; since they outnumber us, we perhaps are the unusual ones) is due to the presence of a fold of skin, the epicanthic fold, at the inner end of each eye.

¹ See the results of an investigation of smuggling over the Burma Road, *Time*, December 25, 1944, pp. 60–61; General Chennault's charges, *Time*, April 16, 1945, p. 36; and the 'hard-hitting editorials' of 'brilliant, bespectacled Wang Yung-sheng,' editor of 'China's leading independent' newspaper, *Ta Kung Pao* of Chungking, quoted, *Time*, October 2, 1944, p. 58.

² *Life*, December 22, 1941, pp. 81–83.

³ Mrs. Trollope brought this dastardly accusation against our own grandmothers. See her *Domestic Manners of the Americans* (London: Whittaker, Treacher & Co.; 1832), vol. 2, p. 136.

But since 'slanting' eyes suggest something ominous or mysterious—as was illustrated in the recent vogue in America of 'harlequin' glasses, by means of which myopic college girls hoped apparently to add an exotic touch to their fresh but unmysterious young faces—the belief that orientals have them is not likely to be dispelled by any amount of observation. They indicate treachery, and orientals are 'known' to be treacherous. 'A very close study of the Chinese,' Edmund Shaftesbury wrote in 1897, 'discloses the fact that they, as a race, are treacherous, cruel, and criminal by instinct; but held in abeyance through fear, and especially through the inherited memory of tortures devised by their own countrymen to deter criminals from their evil ways.'¹

At the time that was written thousands of Chinese had been imported to work on the western railroads, and although many had died as a result of the barbarous treatment they had received, and the Chinese Exclusion Act had stopped the immigration of any more, enough of them remained to constitute a menace in the labour market. One solution would have been to raise their wages, but it was cheaper to confuse the real issue by inflaming racial antagonism. And since the coolies were patently the most harmless of living things, it was necessary to create the belief that they were the very opposite of all that they seemed to be. Their passive faces became 'inscrutable masks'; their cheerfulness concealed 'devilish duplicity'; their gentle manners were 'sneaking'; their folded hands were thought to hide daggers; and their immense patience was 'a drugged stupor'—spent in dreaming, no doubt, of those antique 'tortures devised by their own countrymen,' though certain goings-on in California would have made such reveries superfluous.

In regard to breasts, yellow and brown women are

¹ Edmund Shaftesbury: *Child Life* (Washington, D.C.: The Ralston Press; 1897), p. 41.

physically and functionally on a par with their white sisters. What they lack is sweaters and brassières. The curious (not to mention the prurient) will find full satisfaction on this delicate point in the numerous photographs reproduced in *Woman*, by Ploss, Bartels, and Bartels.¹

The belief that all Hindu girls marry and procreate while still children was reinforced by Katherine Mayo's juicy *Mother India* (1927), in which it was asserted to be a 'common practice' for Indian girls to become mothers 'nine months after reaching puberty,' an event that Mrs. Mayo vaguely thought might take place in India somewhere between the ages of seven and thirteen. The former she confessed to be 'extreme,' but she saved her readers from too sharp disappointment by assuring them that the latter was 'well above the average.'²

Unfortunately for the lascivious moral indignation her book aroused, the facts do not bear her out. Dr. M. I. Balfour of Bombay, reporting on 6,580 cases, says that the average age of the mother at the time of the delivery of her first child was 18·7 years in Bombay and 19·4 years in Madras. Of these none were mothers under 13 and only 42 were under 15.³ The average age of girls at marriage in India, according to the Indian Census Report for 1931, was 13·33, and this does indeed seem very young by our standards. But it is to be noted that about three years elapse, on the average, before the birth of the first child, which suggests (as Norman Douglas claims) that the child-marriages of India are often forms of betrothal and a means of ensuring rather than of destroying innocence.⁴

¹ Herman Heinrich Ploss, Max Bartels, and Paul Bartels: *Woman* (London: William Heinemann, Ltd; 1935).

² Katherine Mayo: *Mother India* (London: Jonathan Cape).

³ 'Mother India. Conditions of Childbirth,' *Times of India* (Calcutta), October 10, 1927, p. 8.

⁴ Norman Douglas: *Good-bye to Western Culture* (New York: Harper & Brothers; 1930), p. 51.

Whatever the customs of India are, however, the United States is hardly in a position to export indignation. Six of our states still allow girls of 12 to be legally married, one judiciously sets the limit at 13, and ten others at 14—a tolerance that had been taken advantage of by some 125,000 eager brides at the time of the 1930 census. The Turks, by the way, place the minimum age of marriage for girls at 15.

The U.S.A. record, indeed, is even worse (or better) than Italy's—an arresting fact, for the 'Latins,' as anyone knows who attends the movies or listens to the radio, are notoriously amorous and particularly disposed to direct their attentions towards the very young. That 'Latins are ardent lovers' is a basic tenet of the national creed. 'Romance,' the great vulgar euphemism for sexual preliminaries, meant originally 'after the fashion of the Romans.' It has reached its present popular meaning by a circuitous route, but the forces that directed it are still at work.

Properly speaking, Latins are those people who speak languages that are derivatives of Latin. Among them, by the way, are the Rumanians; but since the general public is unaware of this linguistic fact, the subjects of ex-King Carol, for all his Majesty's personal notoriety, are not generally thought of as being inordinately amorous. That distinction is reserved for Italians, Frenchmen, Spaniards, and (since Rudolph Valentino's performance in *The Four Horsemen of the Apocalypse*) especially South Americans. The Indians, of course, who make up the majority of the population of South America, are not so thought of. 'Latin American' in the world of 'romance' refers exclusively to varnished young men in cummerbunds who dance the rumba and the samba in Havana, Rio, or Buenos Aires. The cognoscenti include the Filipinos among the sexually athletic, by virtue no doubt of their speaking Spanish.

Now, as anyone knows who has spent any time in the

countries inhabited by these peoples, the family life of the Latins is severely moral and even, compared with the free existence of American suburbia, drab. No decent French, Italian, or Spanish girl, for instance, would think of going alone in a car or to the movies with a young man, and no decent French, Italian, or Spanish young man would think of marrying a girl who would be willing to be alone with a young man. There is, to be sure, less hypocrisy among them than among us. The double standard is taken for granted and the existence of prostitution is not denied. In Italy, at least, the brothels are—or were under Mussolini—supervised by the government and conducted with illuminated signs, mannequin parades, season tickets, special reductions for wholesale purchases, and all the other paraphernalia and procedures of commercial enterprise. But the Italians have always been realists, and their openness is probably more innocent than our elaborate concealment.

Our error in regard to the ardour of the Latins is very old and many things have contributed to it. Among them was an ancient belief that the sun was sexually exciting, with the corollary that desire increased as one neared the equator. Negroes, according to this philosophy, were particularly amorous—Tondelayo is in the great tradition—and next to the Negroes were the Italians and Spaniards, whose homelands thrust southwards into the stimulating latitudes.

The actions of the peoples were made to fit the theory. The gay volubility of the Italians, the ease with which they expressed their emotions, showed all too plainly what sort of people *they* were. While the Spaniard's hauteur, restraint, and frigidity bespoke the tremendous effort required to keep *his* passions under control.

Carried to its logical conclusion, the theory would imply that the Eskimos owe their continuance to parthenogenesis, but such an implication is completely negated by the

accounts of home life in the igloo brought back by Rockwell Kent, Peter Freuchen, Gontran de Poncins, and other visitors to the frozen north. Space and modesty do not permit even a bowdlerized summary of their descriptions, but they make it plain, that, so far as the Eskimos are concerned, the arctic night is none too long. Kent, by the way (an American and therefore, according to this theory, comparatively frigid), regards their customs with tolerant amusement and confesses that, to some extent, he joined in; whereas Poncins, a Frenchman, is plainly embarrassed by them, and goes to considerable trouble to assure his readers that he was only an observer.

The ascription of libidinousness to the Latins is, in a way, a wish-projection on the part of the inhibited Saxons. It is a part of the attitude that led the English for centuries to call syphilis 'the French disease' and leads them even now to refer to contraceptives as if they were manufactured only in France. Yet Casanova maintained that he found more licentiousness in England than in any other country he visited, and always boasted that he employed none but English contraceptives, the best obtainable. To this day visitors from Paris—or, for that matter, from Gomorrah—must be taken aback at certain window displays around Leicester Square and at the droves of drabs between there and Piccadilly who make such displays advisable and profitable.

The Americans probably brought this particular prejudice with them as colonists. Certainly by Mark Twain's time it was thoroughly entrenched. And it was greatly strengthened in the First World War and during the tourist boom of the twenties when American men saw things in Paris which, in all sincerity, they did not know also went on in Peoria and Paducah, and when American women, uncorseted and unaccompanied, sauntered the boulevards with painted

faces and generous smiles and found themselves, to their naïve astonishment, eagerly accosted.

Almost a 'race' apart, in the popular mind, are 'half-breeds,' concerning whom nothing is better 'known' than that they are inferior to both parental stocks. But among other living things hybridization, a fundamental process of evolution, is a strengthener rather than a weakener of a strain, and there is no reason to suppose that man differs in this respect from all other forms of life.

On the contrary, there is considerable evidence that the offspring of a union of members of different ethnic groups is likely to be a biological improvement upon its parents. The children of the Maori-white marriages in New Zealand seem to combine the best features of both groups. The descendants of the scrambled mixture of Polynesians, Japanese, Filipinos, Koreans, Puerto Ricans, and Europeans in the Hawaiian Islands have been shown to have a higher fertility rate and to be more robust than all the other ethnic groups there.¹

The United States itself has been the scene of one of the most extensive mixings of races in modern times. This fact, any allusion to which is furiously resented by those who have been active in bringing it about, is concealed from the public consciousness by the trick of considering all people as blacks who have any black blood in them. Yet about eighty per cent of American Negroes have some white or Indian blood, or both.²

As to the attractiveness of the product, let the millions decide who pay their money to look at Lena Horne or Katherine Dunham. Or the even more millions who go to such expense and trouble to darken their skins by cosmetics

¹ Romanzo Adams: *Interracial Marriage in Hawaii*. (New York: The Macmillan Company; 1937).

² See Melville J. Herskovits: *The Anthropometry of the American Negro* (New York: Columbia University Press; 1930).

and suntan and who swoon in ecstasy over certain movie stars whom their grandmothers would not have recognized as white men.

Many half-breeds probably are inferior to the parent groups. In a society in which racial mixture is taboo, those who mix are likely to be either the shiftless or the neurotic, the restless, the despairing, or the grossly sensual. There are fifty bad reasons for such a mixture, in a group where it is frowned on, for every good one, and the odds are therefore fifty to one that the child will inherit a bad strain. But it is not because of the mixture that he is bad ; he would have had the same heritage had his parents bred within their own group. Furthermore, once born, the half-caste is in many parts of the world subject to contempt and discrimination that would make him rebellious, aggressive, and treacherous under any circumstances. Heredity and environment are against him. But the mixing, by itself, has not been demonstrated to be harmful.

LO, THE POOR INDIAN!

AFTER the Wild Girl of Songi had been washed three times it was discovered, to the delight of her captors, that she was white. This strange creature, wearing a gourd for a bonnet, had entered the village of Songi, four or five leagues from Châlons, in the dusk of a September day in 1731, had slain a dog with a flip of her little finger, eaten a rabbit raw, and then gone quietly to sleep in the crutch of a tree.¹

The pleasure occasioned by the revelation of her true colour was largely due to the fact that it confirmed the hope that she was a savage. Her extreme dirtiness, her mingled ferocity and mildness, her simplicity in dress and diet, and her rudimentary powers of speech were strongly indicative. But had the blackness not washed off, she might perhaps have been a wandering blackamoor, a strayed 'Esquimeau,' or even an elf, and—while these were all creatures whose capture would reflect credit on any community—a true savage, in the early eighteenth century, was infinitely more desirable.

Children of nature were definitely in the air. Philosophers, then as now, were offering fancy prices for them, and all villages were on the lookout. A generation before, a bear-boy had been discovered in Lithuania, and shortly after that two more in Poland. Goat-boys had been glimpsed in the

¹ The account of the Wild Girl of Songi is drawn from August Rauber's *Homo Sapiens Ferus, oder Die Zustände der Verwilderten und ihre Bedeutung für Wissenschaft Politik und Schule*. Zweite Auflage, Leipzig, 1888; to be found, translated, pp. 252-58, in Robert M. Zingg: *Wolf-Children and Feral Man* (New York: Harper & Brothers; 1942).

Pyrenees, leaping from rock to rock; and near Cranenburg in the province of Ober Ysel, in January 1715, a wild girl had been caught, 'very monstrous in looks' and naked except for 'a little apron made with straw.' Her hard, brown skin was impervious to water, but soon after her capture it fell off completely 'and she grew a new one.'¹

All of these beings, and the score or so more that were captured in the ensuing decades, had a definite set of common characteristics. They were strong, dirty, ferocious, impulsive, and unconventional. They ate their food raw, disdained the luxuries of civilization, and spoke—at least until their respective press-agents had them trained—in halting monosyllables. They were inclined to be gay, in a childish way, but were sullen and angry if crossed in any manner. They were passionately devoted to liberty, and showed the most violent resentment at any personal restrictions, such as clothing or four walls. At the first mention of Christianity, they intuitively perceived its truth and fervently embraced it. Thus on hearing God's name, the Lithuanian Bear-boy 'raised his hands and eyes to the sky' in mute adoration, while the Songi girl exchanged her gourd for a coif and became a nun.

Such, two hundred years ago, was the savage, or 'salvage,' for the word is ultimately related to 'sylvan' and means a dweller in the woods. Hobbes's opinion that the life of man in the natural state was 'solitary, nasty, brutish, and short' was obviously, for that moment at least, the prevailing one. It had triumphed, though not completely, over the equally venerable companion belief that the wild state was a vestige of the Golden Age, maintaining its ease and charm along with its innocence.

¹ For the Cranenburg girl, see Zingg: *Wolf-Children and Feral Man*, p. 234; for the Wild-boys of the Pyrenees, p. 229; for the Lithuanian boys, p. 211; and the Polish boys, p. 215.

As the century advanced, the romantic view gained the ascendancy, and the Noble Savage, who ate of the fruit of the breadfruit tree and drank the milk of the coconut in happy leisure, devoting his energies exclusively to love and high thought, eclipsed his filthy forebear. His career was short-lived, however. For with the rise of the abolition movement, threatening property, men of substance perceived that their plantation hands, and the peoples from whom such hands were forcibly recruited, were, after all, an inferior and degraded lot, to whom even the conditions of slavery were a boon.

The current popular conception of savages (which colours all discussions of race, for savages are thought to represent the 'lowest' of races) embraces parts of both of the older theories, though definitely inclining toward the darker. The savage, in prevailing general opinion, is thought to be physically and morally dirty, hairy, inarticulate, irreligious, stupid, and (as his name plainly implies) savage or ferocious, his ferocity culminating in cannibalism, an activity so gruesome that it transcends horror and passes into the comic.

On the credit side of the ledger, he is granted superiority in health and instincts, and—if he (or, rather, she) lives on a Pacific island—is endowed with a measure of voluptuous beauty. He is a muscular brute with perfect teeth, who can endure pain without flinching; and his mate bears children with as little effort as she squeezes pips out of an orange. He is familiar with natural remedies unknown to the white man, can foretell the seasons, and is possessed of a miraculous 'sixth sense' of direction.

The exact opposite would be nearer the truth in all these items, favourable and unfavourable.

In general build the savage is so much lighter than civilized man that anthropologists accept indications of heavy musculature in a skeleton as evidence that it did not belong

to a member of some primitive group.¹ Not that primitive people are flabby. They just do not go in for the kind of manual labour or sport that builds bulging muscles. Furthermore, almost all savages have at one time or another suffered from malnutrition that has restricted their growth, and most of them are weakened by disease.

The common belief in the savage's 'jungle lore' was expressed by an article in *Time* which, in discussing the problems facing our troops in the Pacific, remarked that 'the white man, with his civilized stomach, his vulnerability to ringworm, malaria and leeches' was at a disadvantage compared with the natives, 'who had learned through the centuries that the best clothing was no clothing; the best shoes, no shoes; the best rations, whatever grows in the jungles.' The editors were answered in short order, however, by a naval lieutenant who had had the enlightening misfortune to spend a year in the jungle. 'Compared to our "unacclimated" American boys,' he wrote, 'the natives have proportionately much more malaria for lack of clothing after sundown; more ringworm and other foot diseases because they go barefoot; and are more susceptible to tuberculosis, pneumonia, and other diseases because of improper nutrition.'²

That the savage bears his ills with stoicism may well be. Most people do. Thoreau remarked, over a century ago, that the life of the ordinary man everywhere was one of 'quiet desperation.' But that the savage's fortitude shows him to possess any superior or even unusual powers is much to be doubted. All men are tougher than used to be thought. Feats of endurance attributed to savages now seem less incredible than they formerly did, and by the very latest theories they may even have been salutary. Thus Dr. W. E.

¹ See William Howells: *Mankind So Far* (New York: Doubleday, Doran and Company, Inc.; 1944), p. 189.

² *Time*, October 16, 1944, p. 70; November 27, 1944, p. 9.

Davis, writing in 1938, hardly expects to be believed when he relates that some of his Congo patients got up and walked home, several miles through the jungle, three days after a major operation, without noticeable ill effects.¹ Today it would excite less incredulity. It would hardly be advised, but evidence has been accumulating to suggest that it might be less harmful than the customary procedure of lying flat in bed for two weeks.

That primitive people do not have caries is frequently and confidently asserted, and is usually explained as being due to the fact that they have not been pampered with soft foods. Even two hundred years ago, when most modern refinements were unknown, this was believed: when the Wild Girl of Songi gave up her 'natural' diet of raw frogs 'all her teeth fell out.'²

The subject has never been scientifically investigated, but there is evidence that at least some primitive people have decayed teeth. Davis reports that a sound set was the exception rather than the rule in those parts of the Congo with which he was familiar. The mysterious 'Rhodesian Man' whose skull was found at Broken Hill in 1921 may or may not have been as ancient as some palaeontologists claim, but he was certainly old enough to be indisputably primitive and he had ten badly decayed teeth.³

Doubt of the popular conception is further strengthened by the fact that the teeth of wild animals decay, caries being, according to Boulenger, the commonest cause of death among carnivora in the wild state. And Bradley alludes to 'the unhappy evidence' of a three-toed horse with pyorrhea.⁴

¹ W. E. Davis: *Ten Years in the Congo* (New York: Reynal and Hitchcock; 1940), p. 120.

² Zingg: *Wolf-Children and Feral Man*, p. 255.

³ Davis: *Ten Years in the Congo*, pp. 140-41. Howells: *Mankind So Far*, p. 176.

⁴ E. G. Boulenger: *Searchlight on Animals* (London: Robert Hale; 1936), p. 85. John Hodgdon Bradley: *Patterns of Survival* (London: Routledge and Sons; 1939).

Equally venerable is the fiction that primitive women never have trouble in childbirth. Thus Richard Ligon, in his *True and Exact History of the Island of Barbados* (1657), relates—no doubt as a rebuke to the effete mothers of England—that an Indian slave, Yarico, when her time came, modestly excused herself for a few minutes, bore a healthy child, washed it in a near-by stream, and resumed her duties as a housemaid immediately.

But modern mistresses need not sigh too longingly for the Yaricos of yesteryear, for they probably existed more in the minds of 'True and Exact' historians than in reality. Modern observers, at any rate, have not found them plentiful. Stefansson records that childbirth is one of the most important causes of mortality among the Eskimos, and Herskovits found it dreaded in Dahomey. Davis, who assisted many Congo women in their deliveries, says they did not have an easier time of it than other women, and Scheinfeld, Murdock, Ploss, Bartels, and others who have surveyed the literature or been in the field agree in dismissing the belief as a myth.¹

That savages have a 'sixth sense' of direction has been maintained by men of far higher scientific standing than James Fenimore Cooper. Thus Coward in his book on the migration of birds says that human beings possess, in varying degrees, 'a sense of direction . . . a wonderful power of finding their way in strange places,' and that this sense 'is most marked among those men we choose to call uncivilized,' men who live 'in closer touch with nature' than those 'degenerate pathfinders' who travel by road and rail.²

¹ Vilhjalmur Stefansson: *The Friendly Arctic* (London: G. G. Harrap). Davis: *Ten Years in the Congo*, p. 218. Melville J. Herskovits: *Dahomey* (New York: J. J. Augustin; 1938), vol. 1, p. 399. Amram Scheinfeld: *Women and Men* (New York: Harcourt, Brace and Company; 1944), p. 274. Herman Heinrich Ploss, Max Bartels, and Paul Bartels: *Woman* (London: William Heinemann, Ltd.; 1935), vol. 2, p. 582.

² T. A. Coward: *The Migration of Birds* (Cambridge: The University Press; 1929), p. 58.

It is evident that Mr. Coward has never tried to extricate himself from a cloverleaf intersection on the Bronx River Parkway or to work his way northwest from the Loop on the Chicago surface lines, or he would not view the path-finding talents of the city-dweller so lightly. But no matter—he expresses concisely a widespread belief.

Widespread, but untrue. For if we may trust the accounts of men who have spent much time with primitive peoples in 'trackless' wastes or jungles, the savage relies, like anyone else, on observation. He just happens to be more familiar with his own terrain than the naïve visitor, and recognizes certain boulders or trees, or the contour of a hill or shoreline—just as the visitor, on *his* terrain, recognizes individual houses and shops that would probably appear indistinguishable to the instinct-laden savage were he fool enough to turn explorer and 'discover' our cities. But take him away from his own familiar terrain, even in his own country, says Stefansson, and he not only is no better than a sensible white man but is actually worse. For the white man has the advantage of possessing such concepts as triangles and arcs, wholly lacking to the savage but very useful in plotting directions and estimating position.¹

In a like manner, the savage's mysterious ability to foretell the seasons and estimate the harvest, when it is anything more than guesswork, is based, as all such predictions must be, on inferences drawn from observation. It is no more mysterious, when one knows the facts, than the power of an Iowa farmer to predict a mortgage after three years of drought. Thus Driberg, living among the Didinga in Africa, predicted a good harvest after unusually heavy rains and was astonished when the natives prophesied the reverse and more astonished when they proved to be right. But they explained to him that they knew the rains would drown the

¹ Vilhjalmur Stefansson: *My Life with the Eskimo* (London: G. G. Harrap).

young bees upon which they relied for the fertilization of their crops.¹

These supernatural awarenesses with which the savage is credited are intended, it need hardly be said, to demonstrate his inferiority to civilized man. They may indeed produce immediate advantages, but they indicate that his judgments are based on something other than reason. For that the savage is mentally inferior to the civilized man is a foregone conclusion.

Various attempts have been made to test the comparative intelligence of different peoples, but the results have never been accepted as valid, because it is impossible to devise a test that affords a just basis for comparison. What is intelligent in one situation or for a person with one set of values may not be intelligent in another situation or for another person; and the tester is always too conditioned by his own culture to judge of circumstances or values wholly outside of it. Boas and Radin, who have both studied the mentalities of primitive peoples, are of the opinion that no inferiority between them and other peoples has ever been demonstrated. And even Hooton agrees.

The question is complicated—or, rather, rendered futile—by the fact that ‘savage’ and ‘civilized’ are, except for purposes of abuse or self-laudation, meaningless terms. Old Meynell’s remark that, for anything he could see, ‘all foreigners are fools’ may elicit a smile, but it comes about as close to being a universal sentiment as anything man has ever spoken.

It is depressing to think how often even trained minds are warped by this prejudice. Thus Prescott in the fourth chapter of *The Conquest of Mexico* relates the ‘remarkable feat’ of ‘the barbarous Aztec’ in computing a calendar that was more

¹ J. H. Driberg: *The Savage as He Really Is* (London: Routledge; 1929), pp. 21–22.

accurate, by eleven days, than the one the Spaniards had brought with them. And in the following chapter he admits that their diet was better, their knowledge of medicine more extensive, and their work in gold and silver superior to that of their conquerors. Yet not for a fraction of a second did it enter his mind that the Spaniards—whose sole advantages were ferocity and gunpowder—might have been the barbarians.

Those moderns who share Prescott's point of view and who feel that the matter is worth discussing at all support their opinion by asserting that savages are inarticulate, speaking only simple, ungrammatical languages, that they are dirty, irreligious, and cruel, and—as a crowning proof of all want of refinement—that they eat missionaries.

Savages have long been thought to be almost devoid of language. The American Indian, in most popular representations, communicates entirely by means of grunts and a few verbs in the present indicative. The Greeks assumed that anyone who was not speaking Greek was merely making an idiotic repetition of the sound 'bar-bar,' and hence dismissed him from consideration as a bar-bar-ian. The name Hottentot is cognate with the Dutch word for stutterer, and reflects the conviction of the early Dutch travellers that the black people were not speaking, but only trying to speak.

Pidgin English (a corruption of 'business' English—and not too far removed, at that, from the gobbledygook of much commercial correspondence), composed mainly of debased English words following Chinese idiomatic usage, has done a great deal to encourage the delusion that primitive peoples talk like half-witted children with cleft palates. The gaiety of nations has been much enhanced by innumerable cartoons depicting a fuzzy savage speaking this outlandish gibberish to some stranded sailor or aviator. But it is rarely considered that of the two men pictured it is the savage who

is the linguist. Poor English though pidgin may be, it is, after all, a form of the white man's language, and it is the savage who has had the intelligence and enterprise to master it. It probably seems silly to him, too, but since it is the only talk that white men comprehend, he has to use it.

Among his own people, he is likely to speak an exceedingly complex language, with elaborate declensions, conjugations, tenses, numbers, and moods. Stefansson says that one Eskimo verb may be used ten thousand different ways. Driberg believes that the Didinga have a much larger vocabulary than most English-speaking people and denies that savages cannot express abstractions. In all of the Bantu languages, he says, by way of specific illustration, there is a whole class of words devoted to the abstract.¹

Primitive people are more likely to be precise than civilized people. Thus where a white man might say that he hears a dog barking, a Dakota Indian would be inclined to say that he hears a brown dog, which is about two hundred yards away and running in a north-easterly direction, barking loudly. The white man would, no doubt, regard the Indian as tedious, but the Indian would probably regard the white man as vague.

The dirtiness of primitive people is usually reported by tourists who have an opportunity to see only those who have been torn from their proper environment and reduced to beggary in alien settlements. They are slum-dwellers, and if their culture is to be judged by them, ours must be judged by Chicago's West Madison Street, New York's lower East Side, and London's Bethnal Green. Hundreds of millions of 'civilized' people live in worse dirt than does any savage community whatever.

Those who have lived among primitive peoples whose

¹ Stefansson: *My Life with the Eskimo*, p. 357. Driberg: *The Savage as He Really Is*, pp. 66, 70, 71.

cultures were still uncontaminated are unanimous in praising their personal cleanliness. Malinowski noted that the Melanesians 'have an extreme sensitiveness to smell and bodily dirt' and found a crowd of them 'considerably more pleasant in this respect' than a gathering of European peasants. Alec Waugh, who cannot be accused of having a professional anthropologist's disregard of civilized values, says of the New Hebrides: 'The natives lived in conditions of savagery, and, as the conditions of savagery, I suspect, always are, those conditions were practical and clean.'¹

That the white man despises hairiness as a characteristic of the lesser breeds is unfortunate, for he himself is the hairiest of all human stocks. His famous burden definitely includes an extra ounce or two of wool. Among so-called savages, only the Hairy Ainus of Japan, who so admire hirsuteness that their women wear tattooed moustaches, can in this respect compare with the lords of creation, and the Ainus are more white than Japanese.

Instead of being immoral and irreligious, savages are fanatically conventional and preposterously devout. One of the few advantages of being civilized, in fact, is that one does not have to be so moral as a savage.

Of course savages are not popularly thought of as having no religion at all. It is vaguely acknowledged that they bow down to wood and stone in some barbarous fashion, but it is felt that they are not 'truly' religious in the sense that our churchgoers are. 'Plucky lot she cared for idols,' Mr. Kipling sings, 'when I kissed 'er where she stud! On the road to Mandalay.' Heathen idols, made o' mud, were plainly thought to be unable to compete in fascination with a Cockney's kiss.

¹ Bronislaw Malinowski: *The Sexual Life of Savages in North-Western Melanesia* (London: G. Routledge and Sons; 1932). Alec Waugh: *Hot Countries* (New York: Farrar & Rinehart; 1930), p. 224.

But the chances are—though no scientific test of the relative power of the two attractions is known to have been made—that they could. For savages are deeply religious. They have more superstitions and more taboos than we have and attach more importance to them. Stefansson states it as an axiom that ‘the lower you go in the scale of human culture, the *more* religion you find,’ and for the enlightenment and comfort of the half-believers in our casual creeds, he lists just a few of the religious restrictions which, among some Eskimo tribes, surround the eating of the ribs alone of the mountain sheep.

A young girl [he says] may eat only certain ribs, and when she was a little older she might eat certain other ribs; but when she was full grown she would for a time have to abstain from eating the ribs which had been allowed to her up to then. After a woman had had her first child, she might eat certain other ribs, and after her second child still others, and only after having five children might she eat all the ribs; but even then she must not eat the membranes on the inside of the ribs. If her brother’s child was sick, she might not eat certain portions, and if her brother’s wife died there were still different prohibitions. The taboos applying to the ribs of the sheep had relation to the health of her children and of her relatives. They also depended upon what animals she herself had killed recently, and on whether those animals were male or female.¹

Nor were such restrictions, which would seem intolerable to a civilized man, regarded as burdens or annoyances. On the contrary, the Eskimos delighted in them, as opportunities for being virtuous, and considered those who knew of still other limitations as men of especial grace and sanctity.

The savagery of savages, like the piggishness of pigs, is self-evident to all who accept words for facts. Estabrooks,

¹ Stefansson: *My Life with the Eskimo*, pp. 38, 410–11. (Quoted with the kind permission of the author and the publisher, Messrs. Harrap.)

who apparently has been spared the spectacle of civilized men in a traffic jam or of their wives at a bargain counter, refers complacently to 'that wild frenzy to which the savage yields so easily,' and Professor Hooton, who through a double negative of scepticism often arrives at a positive commonplace, states that 'savages are more or less what their name connotes.'¹

But others do not agree. Stefansson, who walked into the Old Stone Age when he encountered the Union Straits Eskimos, found them gentle and amiable. It would be difficult, he says, to find their equal in kindness 'in any grade of our own civilization.' Malinowski, at the other end of the world, was delighted with the urbanity of the Trobriand Islanders. He found mutual consideration widely displayed and 'seldom witnessed quarrels or heard bad language.' As for blows between husbands and wives, he felt it would have been 'unthinkable,' and is forced to conclude, despite the popular conception of 'cave-man stuff,' that wife-beating is a civilized, not a savage, practice.²

Such a generalization, of course, may have been based upon a limited experience, both at home and in the field, for there is plenty of evidence that the kraal and the igloo are no more exempt from strife than the penthouse. But almost all primitive women do have a recognized social status, with immunities and privileges that their civilized sisters lack, for all the pretensions of chivalry. Their brothers and fathers continue as their protectors even after marriage, and the 'bride price' is often, in practice, not a contractual fee but a sort of bond which the groom must post as security

¹ G. H. Estabrooks: *Man the Mechanical Misfit* (New York: The Macmillan Company; 1941), p. 51. Earnest Albert Hooton: *Apes, Men, and Morons* (London: Allen & Unwin; 1938).

² Stefansson: *My Life with the Eskimo*, pp. 3, 32, 174, 188; *The Friendly Arctic*, p. 89. Malinowski: *The Sexual Life of Savages*, vol. 1, p. 113; vol. 2, pp. 307, 419.

for his good behaviour. For should the bride go home to mother—or, rather, to father and all his warrior kin—the bride price will not be returned unless it can be shown that the rift was wholly of her making. Nor need the abused wife always go to such trouble to get her rights. She often has resources nearer home. Jack Harris told Scheinfeld of a woman among the Ibo, in Nigeria, who persuaded all the women of her village to go on strike because her husband had criticized her cooking, and the finicky man was soon compelled by his exasperated friends to swallow his meals in patient, if nauseated, silence.¹

When it comes to beating his children, civilized man does seem to be definitely more active than the savage. 'The Congolese,' says Davis, 'are indulgent parents. . . . I cannot remember ever having seen a native whip a child,'² and other explorers and missionaries, from all corners of the world, support his testimony. Not that little black bottoms go wholly unwarmed, but there does seem to be less of the atrocious brutality, often culminating in murder, that so many civilized parents visit upon their unhappy offspring. In our defence, it has been pointed out that children have a greater value to primitive people, but in some ways the defence is a heavier condemnation of civilization than the fault it seeks to extenuate.

The 'obscurity' of the savage which so horrified missionaries in the nineteenth century was nine-tenths frankness, a quality so unknown in the missionaries' own culture as to be unrecognizable to them. Recreation and procreation were dissociated in our fathers' minds, and when the significance of the hula first burst upon them they had a bad moment. The sight of such dances, plus a glimpse of a few of the more realistic sketches and figurines used to invoke fertility,

¹ Scheinfeld: *Women and Men*, p. 340.

² Davis: *Ten Years in the Congo*, p. 224.

convinced them that savages were obsessed with sex, and their conviction has become general.¹

Further observation by less inhibited observers has, however, modified this hasty judgment. The savage does not think about sex incessantly. Hunting, warfare, trade, and religion take up a considerable part of his thoughts. The orgiastic nature of *some* of his dances is believed by certain students to indicate not the ease with which he is roused but, on the contrary, the magnitude of the effort required to stimulate him. 'Some' is italicized because the fact is worth stressing that all primitive peoples have dances that have to do with other things than sex; whereas ordinary civilized peoples have no dances that have to do with anything else whatever. As a matter of fact, the Dies Committee in 1943, in the case of John Bovingdon, virtually ruled that any form of dancing except cheek-to-cheek constituted an un-American activity, participation in which automatically disqualified a man for public office.²

Even sex, however, is not so sensational as cannibalism. In the popular conception, all savages are cannibals, and demonstrate by this fact, beyond all cavil, their irreligion, filth and ferocity.

The eating of human flesh is believed to be pretty well confined to blacks, though in earlier times others were thought to indulge. Saint Jerome says that he saw Scotsmen in the Roman army whose regular diet was human flesh, the which to better masticate they had 'double teeth all round.' Ogilby has the most vivid pictures of Indians selling human joints, roasts, ribs, chops, and chitterlings to Aztec

¹ The reader who will examine the photographs of such figures in Ploss, Bartels, and Bartels: *Woman*, vol. 2, pp. 60-71, will comprehend—and perhaps share—the missionaries' shock.

² See *Time*, August 9, 1943, p. 18, and August 16, 1943, p. 19; the *New Republic*, August 16, 1943, p. 213; the *New York Times*, August 1, 1943, p. 33, August 3, p. 21, August 4, p. 16, August 5, p. 1.

housewives, and the King of Rabbah told Driberg that 'it was well known' that all Europeans are cannibals.¹

The nineteenth century introduced what might be called the Golden Age of cannibalism, or perhaps it might be more accurate to call it the machine age or mass-production era. For cannibals, who had theretofore been rarities, known only to seasoned voyagers, were now seen by scores of journalists who took week-end trips to inspect them. Stanley claimed that there were thirty million people in the Congo Basin alone who relished 'human flesh above all other meat'—though, like the Kilkenny cats, they must have eaten each other up, for the most recent census lists scarcely half that number as the region's total population. The explorer Schweinfurth said that the chief purpose of the slave trade in the Congo was to furnish human flesh to consumers, among whom (he added) the more thrifty rendered the fat for illuminating oil. Nor was the Dark Continent alone in such horrors. Dr. Carl Lumholtz reported that the Maoris used to slaughter a thousand victims for one merry-making, baking the bodies in vast underground ovens.²

In our own time the late William Seabrook thrilled thousands with his account of 'self-respecting cannibals . . . with good appetites and healthy consciences' who will sit down to a snack of *homo sapiens* 'simply because they consider it good meat.' He himself, in the interest of the Sunday supplement, sat down with them to both roast and steak, which he informs us were 'like good, fully developed veal.'

¹ Saint Jerome's observations are quoted by George M. Gould and Walter L. Pyle: *Anomalies and Curiosities of Medicine* (Philadelphia: Saunders & Co.; 1897), p. 407. John Ogilby: *America* (London: The Author; 1671), p. 87. (Ogilby was Cosmographer Royal and Master of the Revels: he may have confused his two functions.) Driberg, *The Savage as He Really Is*, p. 1. Admiral Halsey says there are 'definite signs' that the Japanese practise cannibalism 'among themselves.'

² Stanley, Schweinfurth, and Lumholtz are all so quoted by Gould and Pyle: *Anomalies*, pp. 407-8.

Unfortunately for science, however, police regulations prevented him from giving the exact place and date of the banquet, and the obligations of hospitality compelled him to suppress the name of his host. He does not say that he saw the portions cut from a human body, but he may have refrained out of delicacy. Or it may be that he was served a cut from a preserved specimen, as he states that they both smoke and salt their surplus to preserve it for the hungry days of peace.¹

Against these stories there is nothing to oppose but the duller experiences of other travellers who have had to be content with less sensational victuals. That some cannibalism exists, and that more did exist, seems certain. All flesh-eating animals are occasionally cannibal, and man is no exception. Some groups have even seemed to like human flesh for itself, though they are rare, and their liking is generally explained as an abnormal development. For most cannibalism is ritualistic—as with us it is, symbolically, in the Mass and the Communion. The enemy, or the friend, or the god, is eaten in order to incorporate his virtues—just as, and with as much justification, weaklings among us are urged to eat red meat to become ‘red-blooded’ or to sip beef extract because bulls are strong.

But such refinements as Seabrook notes—skilled chefs, special recipes, and delicate sauces—have not been noted by other visitors to the cannibals. Perhaps they were squeamish, or reticent, or not treated as company, though there is, of course, one other possibility: contrary to common belief savages are not without a sense of humour, and the leg that was pulled for Mr. Seabrook’s benefit may have been his own.

¹ William Seabrook: *Jungle Ways* (London: G. G. Harrap).

A TALE OF A TUB

IN the *New York Evening Mail* for December 28, 1917, Mr. H. L. Mencken diverted himself by greeting what he called 'A Neglected Anniversary.' On that day seventy-five years before, he averred, one Adam Thompson, an adventurous cotton broker in Cincinnati, had created quite a splash by lowering his naked form into the first bathtub installed in America. His act had precipitated a storm of protest. Bathing was universally condemned as an affectation and a menace to health and morals. Medical societies expressed their disapprobation, state legislatures imposed prohibitive taxes to prevent the custom from spreading, and the city of Boston—then as now zealous to protect its citizens from harmful contacts—passed a special ordinance forbidding it. There was strong public resentment when President Fillmore had a tub installed in the White House, but ultimately his example carried the day and bathing came to be tolerated if not practised by our grandfathers.

This story, in its author's words, 'of spoofing all compact,' was 'a tissue of heavy absurdities, all of them deliberate and most of them obvious,' but it was seized upon with avidity by all sorts of people and related as one of the most sacred facts of our history. Quacks used it as evidence of the stupidity of doctors. Doctors used it as proof of medical progress. Bathtub manufacturers used it as proof of their foresight, and assorted reformers used it as proof of the public's lack of it. Editors used it as proof of their own knowledge. It appeared as a contribution to public welfare

in thick government bulletins. The standard reference works incorporated it. It was solemnly repeated by master thinkers, including the president of the American Geographical Society and the Commissioner of Health for the City of New York. Dr. Hans Zinsser communicated it to his readers as one of the esoteric facts of medical annals, and Alexander Woolcott shared it with the radio public as one of those quaint bits of lore with which his whimsical mind was so richly stored.¹

By 1926 Mencken, 'having undergone a spiritual rebirth and put off sin,' felt that the joke had gone far enough. He confessed publicly that his story had been a hoax and pointed out what he felt should have warned the critical reader against accepting it as a fact. His confession was printed in thirty newspapers 'with a combined circulation, according to their sworn claim, of more than 250,000,000,' and the gullibility of the public (which had consisted largely in believing these same papers) received many an editorial rebuke.

But the original yarn would not die. Within a month of its exposure it was being reprinted in the very papers that had carried the confession. Mencken printed a second confession, but that too was swept aside. His bathtub had become a juggernaut that was not to be stopped by so slight an impediment as the truth. Congressmen had vouched for it, preachers had woven it into their homilies, and professors had rewritten their textbooks to include it. What chance had the mere disavowal of one whom they regarded as a notorious buffoon against the affirmations of such ponderous respectability?²

And so the tale of his tub goes on. Not a week passes but

¹ H. L. Mencken: 'Hymn to the Truth,' *Prejudices. Sixth Series* (New York: Alfred A. Knopf, Inc.; 1927), pp. 194-201. See also Vilhjalmur Stefansson: *Adventures in Error* (New York: Robert M. McBride & Company; 1936), Chapter 8; and Curtis D. MacDougal: *Hoaxes* (New York: The Macmillan Company; 1941), pp. 302-9.

² See Mencken's article above.

it is repeated in the press or from the pulpit. Mencken has tried once or twice again to undo the damage, but he has been called a meddler and a liar for his pains and has withdrawn from the unequal struggle. The story has taken its place in our national mythology beside Washington's cherry tree and Lincoln's conversion. It is now above argument and beyond evidence. Five minutes in any library would be enough to refute it, but it has ceased to be a question of fact and has become an article of faith.

Certain reasons for this are fairly obvious. It is one of those stories—like the theory that Bacon wrote Shakespeare—that make their narrators seem very learned without putting them to the trouble of having to acquire knowledge. It has earned many an easy dollar for sage and commentator and has added enough 'fresh material' to textbooks to justify forcing a new edition on the students.

But such temporary individual advantages would not fully account for its vitality. Better canards have been shorter lived. The bathtub story plainly touches something deep in our national psyche, and if we could know why it has spread so vigorously we might know a great deal more about vulgar errors.

One element in its success is that it supports the great idea of progress and particularly the American conviction that progress is to be measured by the increase of material conveniences and creature comforts, an idea that is very important in our national life. An insistent and expensive advertising campaign has connected it with the calendar; the average American is apparently convinced that all mechanical contrivances automatically improve every three hundred and sixty-five days, and under the spell of this delusion he has bought hundreds of millions of cars and radios and refrigerators that he did not need, to the profit of those who fostered the delusion.

The idea of progress is one of our great national investments. The amount of money spent in the schools, in the newspapers, and on the radio to protect it exceeds computation. It is part and parcel of 'boosting,' of that mass optimism which has made us, for good and evil, what we are today. Nothing is more treasonable to the basic American spirit than to doubt that we have improved and are improving—every day and in every way.

And, for reasons that the social historian can perhaps explain, the bathtub has become a special symbol not only of our material progress but of our spiritual progress as well. For we set great store by things of the spirit. Nothing is more warmly rejoiced in than our superiority to the grimy Europeans in the matter of bathtubs. Cleanliness is far ahead of godliness. State that a man mistreats his bathtub and—as far as most well-to-do Americans are concerned—you have put him beyond the pale of consideration. No argument against public housing has been used more consistently and, one suspects, more effectively than the assertion that even if you give bathtubs to the poor they will only dump coal in them. To point out that most housing projects are centrally heated and supplied with gas and electricity, so that their occupants have no need of coal, is to earn the reproach of being frivolous. It is absolutely 'known' that all occupants of housing projects put coal in their bathtubs. And their so doing indicates such depravity that to build houses for them is practically contributing to moral delinquency. The poor have been weighed in the bathtub and found wanting.

It begins to be a little clearer why Mencken's hoax has flourished so. It flatters provincial smugness. It implies that comfortable folk did not come by their comforts without a struggle. They deserve what they have. After all, they pioneered with running hot water. They are heroes, with

their thick mats and heavy towels. Their scented soap was gained only through foresight and endurance.

A similar myth, which has had a smaller circulation but has done fairly well and promises to do better, is that the umbrella is a recent innovation and that its early users had to brave public scorn before they could persuade their obtuse fellows to follow their example. One of our largest life insurance companies informs the public in an advertisement that when umbrellas were first introduced they were attacked as a 'rediculos effemenacy,' and were generally accepted 'only when physicians urged their use "to keep off vertigoes, sore eyes and fevers."' The *Encyclopædia Britannica*, which seems to have taken its information from *The Dictionary of National Biography*, says that Jonas Hanway 'is said to have been the first Londoner habitually to carry an umbrella, and he lived to triumph over all the hackney coachmen who tried to hoot and hustle him down.'

Here, again, we have the idea of progress, and here again the glorification of Milquetoast, a suggestion—not inappropriate for a life insurance company—that there is something brave in seeking your own comfort. Policy holders must all have moments of wondering whether they are not perhaps being a little timid about life, and it must be a great satisfaction to learn that they are in a heroic tradition. The only thing wrong with the analogy, however, is that it is based on error. Umbrellas had been in general use for a hundred and fifty years before the scene depicted in the advertisement, long before Jonas Hanway was born, and for anything we know those who carried them were regarded then as they are now—with envy when it was raining and contempt when it was not.¹

¹ For the National Life Insurance Company's advertisement, see *Life*, January 29, 1945, p. 2.

The *Encyclopædia Britannica*, 14th ed., 1943 revision, vol. 11, p. 166; *The Dictionary of National Biography*, vol. VIII, p. 1197.

Mere mistakes in point of fact, however, do not in themselves make vulgar errors. They are often the starting point, but the fallacy is always the product of certain processes in popular thinking; of arguing from negatives and analogies, of making false generalizations, of worshipping coincidence, of taking rhetoric for fact, of never questioning or even perceiving the underlying conceptions that make for prejudice, and, above all, of a romantic delight in the wonderful for its own sake. And once made, the error, as has been suggested, is likely to owe its vitality to intellectual currents and social forces with which, superficially regarded, it has no seeming connection.

Popular logic is Erewhonian logic. Whereas the trained mind accords belief to plausible evidence only and grants a possibility solely on the basis of a sound inference from established facts, the untrained mind insists that a proposition must be true if it cannot be *disproved*. 'You can't prove it *isn't* so!' is as good as Q.E.D. in folk logic—as though it were necessary to submit a piece of the moon to chemical analysis before you could be sure that it was not made of green cheese.

Analogical argument—the inferring of a further degree of resemblance from an observed degree—is one of the greatest pitfalls of popular thinking. In medicine it formerly led to what was known as the doctrine of signatures, by which walnuts were prescribed for brain troubles because walnut meats look something like miniature brains, foxes' lungs were prescribed for asthma because foxes were thought to have unusual respiratory powers, and bear's grease was rubbed on

'The tuck'd-up semstress walks with hasty strides
While streams run down her oil'd umbrella's sides.'

—Jonathan Swift, *Description of a City Shower* (1710)

And see 'umbrella' in *The Oxford English Dictionary* for references as early as 1610.

It will be remembered that an umbrella was one of the first conveniences of civilization that Robinson Crusoe made for himself.

the head for baldness because bears have hairy coats. Hundreds of futile remedies were based on such false analogies, and they have not all been cleared off druggists' shelves yet, though the survivors are no doubt 'scientifically' prepared and packaged.

Nor was this form of reasoning confined to medicine. It invaded every department of life. It led our grandfathers to wear red flannel underwear because heat is associated with the colour of fire. It endowed various gems with properties suggested by their colours, and it has led modern telepathists to insist that the radio justifies their metaphysical assumptions.

Many popular fallacies are rooted in verbal confusions. How few people who dismiss unwelcome evidence by saying that 'the exception proves the rule' have any idea of what the saying actually means, and how fewer still have any idea of what they mean by using it! So enmeshed is error in words that a whole new science, semantics, has sprung up which offers, with little danger of being challenged, to produce the millennium just as soon as people know for sure what they are talking about. But since much of the vagueness and confusion is in the words themselves, since all words are in a sense abstractions, the semanticists will probably not get anywhere until (as Swift suggested two hundred years ago) they abandon language altogether and carry about with them the objects to which they wish to allude. This solution of the problems of logic, however, raises even greater problems in logistics and so may fail for lack of a proper trial.

The common mind is intensely literal. The public loves rhetoric, yet it is continually taking rhetoric for fact, often with far-reaching and unpleasant consequences. It would be impossible to estimate, for example, how many lives have been blighted and how much human misery has been aug-

mented by the concept of 'blood' as a transmitter of heredity. Yet the term is merely a trope. It has no reality whatever.

The power of this tendency to create myths has recently been demonstrated in the famous assurance that 'there are no atheists in foxholes.' As nearly as the origin of the formula can be traced, it was first uttered by Lieutenant-Colonel Warren J. Clear in a story of Bataan's final weeks, delivered during the 'Army Hour' programme over the NBC Red Network in 1942. Colonel Clear attributed the immortal observation to an unnamed sergeant who had shared a fox-hole with him during a Japanese bombing raid. No pretence was made that there had been an official catechism of every man or that the sergeant was a trained theologian. It was simply meant to be an emphatic way of saying that all men in the moment of peril seek the support of religion.

Whether they do or not is as much a question as whether it is creditable to religion to claim that they do, but neither question was widely agitated. As far as the populace was concerned the rhetorical flourish was a military fact, and as far as the papers were concerned it was always news, however frequently repeated. At first it was only the foxholes of Bataan that were distinguished for their conversional powers, but as the war spread the *mana* was found in any sheltering declivity, and the trenches of Port Moresby and Guadalcanal delivered their quota of converts. There was no reason, of course, why Divine favour should be confined to the infantry, and other branches of the services were soon touched with similar grace. By December 1943, according to an article in the *Reader's Digest*, atheists had been pretty well cleaned out of cockpits (where God, it will be remembered, had been retained in the inferior position of co-pilot); and Rickenbacker's celestial seagull drove them even from rubber rafts. A few sceptics may have gone on lurking in the

glory holes of the Merchant Marine, but their enlightenment merely awaited the first torpedo.¹

There were, of course, dissenting voices. Poon Lim, a Chinese steward, who existed for one hundred and thirty-three days alone on a raft in the South Atlantic, stated, on being rescued, that nothing in the experience had led him to believe in a merciful Providence, even though he too had had a seagull. But then he was a heathen to begin with.

The American Association for the Advancement of Atheism felt that the phrase was a reflection on the patriotism of their members and did their best to refute it. They managed to find at least one sturdy doubter in the army who had had his dog tag stamped 'Atheist,' but unfortunately, though he had once been run over by a tank, he had never been in a foxhole, and hence could not technically qualify. A better candidate, whom the A.A.A.A. overlooked, was E. J. Kahn, Jr., who in one of his articles in the *New Yorker* confessed that he was not a religious man and in another that he had dived into a latrine trench when Jap planes were overhead. Of course an unbeliever in a latrine is not exactly an atheist in a foxhole, but the faithful would probably have been willing to accept it as a reasonable facsimile.²

Not that it would have done the Association any good to

¹ See the *Reader's Digest*, December 1943, pp. 26-28.

Spectacular conversions in times of stress are claimed not only for the common man but for the hero. Thus Lincoln was said to have been converted on the battlefield of Gettysburg, though the widow of Henry Ward Beecher insisted that Brooklyn was the locale of, and the battle of Bull Run the motivation for, this alleged illumination. See Lloyd Lewis: *Myths after Lincoln* (New York: Harcourt, Brace and Company; 1940), pp. 382-85.

² For Poon Lim, see the *New York Times*, May 25, 1943, p. 12. For a similar stalwart, James Whyte, see *The Times*, London, February 1, 1943, p. 3 and February 2, 1943, p. 3.

For the soldier who had his identification disc stamped 'Atheist,' see *The Truth Seeker*, January 1945, p. 13.

For E. J. Kahn's disavowal of religious fervour, see the *New Yorker*, May 8, 1943, p. 53. For his leaping into the latrine, see the same publication, February 20, 1943, p. 34. Note that the disavowal of faith post-dates the latrine.

have found a whole regiment of atheists encamped in a thousand foxholes—as they probably could, had they gone to our Russian allies for assistance. The phrase was intended to confirm prejudice, not to describe combat conditions, and prejudice is not open to conviction.

On the other hand, fortunately, it is not very convincing either. Prejudices are never shaken by counter-prejudices because we never perceive our prejudices to be such. We take them either for reasoned conclusions or for revealed truths, and the most serious prejudices of all, those that affect our thinking most, are generally below the level of consciousness. We think within the framework of concepts of which we are often unaware. Our most earnest thoughts are sometimes shaped by our absurdest delusions. We see what we want to see, and observation conforms to hypothesis. Thus it has been suggested that Darwin's theory of sexual selection was owing not to his observations as a naturalist but to his convictions as a gentleman that certain courtesies were due to a lady, though five minutes spent in watching chickens ought to have dispelled the assumption that Nature shared his code.

The manner in which our thinking is shaped by our unconscious attitudes and assumptions is strikingly illustrated by our reference to China and Japan as 'the East,' when in America they would be more properly described as 'the West.' Of course they are east if you go far enough, but by that logic Chicago is east of New York. The real explanation is that we are Europe-minded—or, more specifically, England-minded. And still more striking is it that Japan, at least, also conceives of herself as the East. She too is Europe-minded, and probably just as unconsciously so. Yet her flag shows her point of view. The menace of the Rising Sun was lost on our complacent fathers, who failed to observe its implication—namely that Japan conceived of herself as a new

power, of unparalleled brilliance and glory, rising *on the European horizon*.

The popular mind, irrational and prejudiced, makes some effort to examine evidence, but it has very little knowledge of the true nature of what it is looking for or of the forces at work to frustrate and confuse it in its search. It generalizes from exceptions, and from a mass of experience selects only those elements that confirm its preconceptions—without the faintest awareness of what it is doing. Most of what is called thinking—even up to and including much of what goes on in the brains of college faculties—is actually a seeking for confirmation of previous convictions. The true scientific spirit that leads men to be particularly suspicious of all beliefs they hold dear is utterly incomprehensible to most people. To the naïve, scepticism often seems malicious perversity: only 'some secret enemy in the inward degenerate nature of man,' said Topsell, could lead anyone to doubt the existence of the unicorn.

And in the eternal search for verification of supernaturalism which engrosses so much of popular 'philosophy,' nothing passes for more cogent evidence than coincidence. The marvelling over unexpected juxtapositions is at once the mark and the diversion of banal minds, and most of them do not require very remarkable happenings to constitute coincidences. Those who for lack of knowledge or imagination expect nothing out of the ordinary are always encountering the unexpected. One of the commonest of 'coincidences,' as Professor Jastrow has pointed out, is the crossing of letters in the mail. It happens a thousand times a day, yet thousands of men and women whip themselves into amazement every time it happens. As far as they are concerned, it is complete and final proof of the supernatural, whether it be telepathy or Divine guidance or merely soul calling to soul. There it is, sealed, stamped, and delivered. Yet of all human happenings,

what is more likely than that lovers or relatives should simultaneously decide to write to each other?

The wonder of most coincidence is subjective. As far as sheer unlikelihood goes, an unsolicited advertisement in the mail is a greater marvel than a letter from someone to whom we have just written. But since we have no emotional interest in the advertisement we rarely meditate upon the 'miracle' of its arrival, and, even where some occurrence is unusual enough to justify comment, a desire to exalt ourselves or a complete preoccupation with our own affairs usually prevents us from evaluating its true nature. That the working of the law of averages has no effect whatever on individual instances is a fact that even trained observers sometimes seem reluctant to face. The chances against almost anything's happening just the way it did are almost infinite, and it is very easy to see marvels if you are looking for them. It has been estimated, for example, that a bridge hand consisting of all the spades in the pack can be expected, according to the law of averages, only once in approximately eight hundred thousand million deals. Apprised of this, any man dealt such a hand could very easily permit himself to be awestruck, and it would be impossible to convince him that there was nothing remarkable about the hand except that it happened to be a desirable one—since exactly the same odds prevail for any hand whatever.¹

Attempts to point this out, however, would probably be met with resentment, since they would detract from the importance of the individual concerned. He would prefer,

¹ See E. C. Kellogg: 'New Evidence(?) for "Extra-Sensory Perception,"' *Scientific Monthly*, vol. 45, 1937, pp. 331-41.

'Dr. Beattie observed, as something remarkable which had happened to him, that he had chanced to see both No. 1, and No. 1000, of the hackney-coaches, the first and the last; "Why, Sir, (said Johnson,) there is an equal chance for one's seeing those two numbers as any other two." '—Boswell's *Johnson* (Oxford: The Clarendon Press [Powell's revision of the Hill ed.], 1934), vol. IV, p. 330.

most likely, to go on believing that the normal order of things had been suspended for his advantage. For the popular love of the marvellous is, at bottom, egotism. That is why it is so easy to encourage it, as the popular press does, inflating every commonplace into a wonder or manufacturing marvels outright. Half the 'miracles' of modern times are pure journalistic fabrications. The success they can achieve was shown in November 1929, when the Boston *Globe* sent a million and a quarter people stampeding into the cemetery at Malden, Massachusetts, by playing up sensational 'cures' that were said to have taken place there. A hysterical woman who had been unable to walk for a year, although her hospital record showed no organic trouble, leaped with joy under the healing influence of the flashbulbs. A blind boy was said to have regained his sight; his own pathetic insistence that he was no better was suppressed, despite his father's indignant efforts to get the papers to retract the story of his 'cure.' Crippled children were stripped of their braces and photographed quickly before they sprawled, crying, in the mud. Meanwhile, extras sold like hot cakes and the Mayor knelt in reverence for the rotogravure.¹

Deliberate misrepresentations and creations of the incidents they 'report' are a staple activity of all but half a dozen papers and news magazines in America. Consider the unwearied zeal with which they have laboured to sustain 'the curse of Tut-ankh-amen.' No one in any remote way connected with the discovery or opening of the tomb can die, at any age whatever, but his death is seen as the working

¹ See Gardner Jackson: "'Miracles" at Malden,' the *Nation*, December 4, 1929, pp. 662-64. And see *Time*, November 25, 1929, p. 18; the *New Republic*, December 4, 1929, pp. 38-40; the *Literary Digest*, December 7, 1929, pp. 22-23; the *Atlantic Monthly*, April 1930, pp. 537-45. H. L. Mencken speaks of the 'vast and militant ignorance, the widespread and fathomless prejudice against intelligence, that makes American journalism so pathetically feeble and vulgar, and so generally disreputable.'—'Journalism in America,' *Prejudices. Sixth Series* (New York: Alfred A. Knopf, Inc.; 1927), p. 15.

of the 'curse.' Edgar Wallace, writing in *McCall's Magazine*, said that the very day the tomb was opened a cobra ate the chief explorer's canary, and, from that day to this, Egyptian vengeance has stalked the entire party. In the papers, that is. As a matter of prosaic record, the members of the expedition seem to have enjoyed remarkable health and to have been blessed with longevity far beyond actuarial expectancy.

The re-telling of the myth, of course, has earned many a penny and added to the success of many a raconteur. People dearly love the old lies, while truth, as Milton said, 'never comes into the world but like a bastard, to the ignominy of him that brought her birth.'

Irrationality must come close to being the largest single vested interest in the world. It has a dozen service stations in every town. There are twenty-five thousand practising astrologers in America who disseminate their lore through a hundred daily columns, fifteen monthly, and two annual publications—and this does not include the half-dozen 'confidential' news letters that keep business executives so consistently misinformed about the future. It is even said that there is a movement on foot to have a Federal astrologer appointed as an officer of the government, and, considering the official recognition given to other forms of superstition, the movement may succeed.¹

But astrologers and crystal gazers are not alone. More men than Bertrand Russell's 'bishops and bookies' live off the irrational hopes of mankind. Journalists, stockbrokers, estate agents, advertisers, lawyers, professors, promoters, doctors, chemists, and politicians also derive a part of their income from the same source. In fact, everyone in our society not directly engaged in the production and distri-

¹ For the clairvoyant nature of confidential business news letters, see Dixon Wecter: 'How Much News in a News Letter?' the *Atlantic Monthly*, March 1945, pp. 43-49. For the demand for a Federal astrologer see the *New Yorker*, May 12, 1945, p. 18.

bution of necessities, transport, artistic creation, elementary teaching, or the maintenance of public order, to some extent, and more or less consciously, preys upon ignorance and delusion.

A great deal of this exploitation is open and shameless. The supply house, for example, that sold nearly half a million steel-jacketed Testaments and prayer books, at exorbitant prices, to the pathetic and gullible relatives of service men, with the vague assurance that they were 'capable of deflecting bullets,' was, as the Federal Trade Commission implied, obtaining money under false pretences. The metal shields, for all the 'God Bless You' stamped on them and the sacred literature under them, would, if struck by a bullet, turn into pieces of shrapnel and produce almost certainly fatal wounds.

There is a lot of this sort of thing going on, and those who practise it in a small way frequently end up in jail. But those who practise it in a big way frequently end up in *Who's Who* and *The Social Register*. They are our prophets and publicists. They do not actually do the stealing; they supply the sanctions for those who do, and they function chiefly by sonorously repeating clichés. They do not have to prove that this or that proposed reform is wrong; all they have to do is to say that 'soft living weakens a nation.' They do not labour to defend racial discrimination; they support 'innate differences.'

One of their most effective catchwords of late has been 'science.' 'Scientists say,' or 'Scientists agree,' or 'Science has proved' is a formula of incantation that is thought to place any statement that follows it above critical examination. They love to recall the doubt and scorn that were heaped on scientists in an earlier day, not as a rebuke to those particular doubters—they are still doing a brisk business at the old stands—but as a rebuke to doubt itself.

For the thing they must defend is not this or that belief,

but the spirit of credulity. To this end they propagate a vague sort of supernaturalism. They have no profound religious beliefs. Most of them, indeed, would deride their own metaphysical professions if they were presented to them in any but the accustomed phrases; but they are convinced that such beliefs are 'good for the people,' and they repel any specific questioning of any specific belief as 'bad taste.' They seem to assume that there is some abstraction called 'religion' which is apart from any particular religious belief, yet which is of so sacred a nature that it throws a taboo of silence over all religions. Religion, they say, is a subject that 'one doesn't discuss'—though truly religious people do not agree with them.

No error is harmless. 'Men rest not in false apprehensions without absurd and inconsequent deductions.' Some of the deductions seem inconsequential as well as inconsequent, but in their larger aspects they are not. It cannot do much harm to believe that hair turns white over night, or that birds live a happy family life, or that orientals have slanting eyes; but it can do a great deal of harm to be ignorant of physiology or zoology or anthropology, and the harm that may result from forming an opinion without evidence, or from distorting evidence to support an opinion, is incalculable.

Obscurantism and tyranny go together as naturally as scepticism and democracy. It is very convenient for anyone who profits by the docility of the masses to have them believe that they are not the masters of their fate and that the evils they must endure are beyond human control. The mist of mysticism has always provided good cover for those who do not want their actions too closely looked into.

From the time of the Peasants' Rebellion on, all true democratic movements have been branded as anti-religious. In part this has been an effort to discredit them, and in part it has been a perception that democracy is essentially anti-

authoritarian—that it not only demands the right but imposes the responsibility of thinking for ourselves. And belief is the antithesis to thinking. A refusal to come to an unjustified conclusion is an element of an honest man's religion. To him the call to blind faith is really a call to barbarism and slavery. In being asked to believe without evidence, he is being asked to abdicate his integrity. Freedom of speech and freedom of action are meaningless without freedom to think. And there is no freedom of thought without doubt. The civilized man has a moral obligation to be sceptical, to demand the credentials of all statements that claim to be facts. An honourable man will not be bullied by a hypothesis. For in the last analysis all tyranny rests on fraud, on getting someone to accept false assumptions, and any man who for one moment abandons or suspends the questioning spirit has for that moment betrayed humanity.

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